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RESEARCH ARTICLE

Type specimens of Limnophorini (Diptera: Muscidae) deposited in the Museum für Naturkunde, Humboldt-Universität zu Berlin (Berlin, Germany)

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ABSTRACT. The type specimens of 153 species of Limnophorini in the Museum für Naturkunde, Berlin, Germany, were revised. Differential diagnoses, notes on the types, and photographs of some of them (habitus and labels) are provided.

KEY WORDS. Diversity, morphology, taxonomy.

INTRODUCTION

The important Diptera collection of the Museum für Naturkunde of the Humboldt-Universität zu Berlin (ZMHU) houses a substantial number of species of Muscidae (Diptera), many of which were described by Paul Stein (1852–1921). Coenosiinae is very well represented in this collection, with 114 types in Coenosiini and 153 types in Limnophoroni, herein revised. Species of this subfamily are predators of small invertebrates. A general review of predation by species of Limnophorini has been given by Werner and Pont (2006).

We followed the report on the ZMHU types published by Pont and Werner (2006), where detailed information on the specimens (holotypes, lectotypes, neotypes, paratypes, paralectotypes and syntypes), their labels and their condition of preservation can be found. For all the types we give a diagnosis, additional notes when relevant, and photographs of of the habitus and labels of some of them.

MATERIAL AND METHODS

In addition to the type-material of Limnophorini listed in Pont and Werner (2006), two species published subsequently with type-material in the ZMHU were included in the present revision: *Limnophora femoriseta* Pont, Vikhrev and Werner, 2011 and *Limnophora mediterranea* Pont, 2012 in Pont et al. (2012).

Some other species were not included, since no type-material was found in the collection (see Pont and Werner (2006) for details): *Camptotarsopoda nitida* (Stein, 1913); *Heliographa tonsa* (Stein, 1909) (junior synonym of *Heliographa javana* (Macquart, 1851)); *Limnophora corsicana* Schnabl, 1911, preocc. (junior synonym of *Limnophora pollinifrons* Stein, 1916 and junior primary homonym of *Limnophora maculosa* var. *corsicana* Schnabl, 1911); *Limnophora orbitalis* Stein, 1907; *Limnophora pulchriceps* (Loew, 1860); *Lispe adscita* Haliday, 1833 (junior synonym of *Limnophora riparia* (Fallén, 1824)); *Lispe albimaculata* Stein, 1910b; *Lispe comitata* Becker, 1904 (junior synonym of *Lispe apicalis* Mik, 1869); *Lispe assimilis* Loew, 1870 (nomen nudum); *Lispe brunnicosa* Becker, 1904; *Lispe cinifera* Becker, 1904; *Lispe flavicincta* Loew, 1847; *Lispe vidua* Becker, 1914 (junior synonym of *Lispe flavicornis* Stein, 1909); *Lispe flavinervis* Becker, 1904; *Lispe litorea* Fallén, 1825b; *Lispe loewi* Ringdahl, 1922; *Lispe pennitarsis* Stein, 1918; *Lispe sociabilis* Loew, 1862; *Limnophora zetterstedtii* Ringdahl, 1918 (junior primary homonym of *Limnophora zetterstedti* Bidenkap, 1892 and a junior synonym of *Spilogona sororcula* Zetterstedt, 1845). Also, the male lectotype of *Spilogona setigera* (Stein, 1907), seen by Pont and Werner (2006), was not included as it is no longer in the box, where there is a handwritten label "TYPUS fehlt".

Dissections of male terminalia were made for some species when their morphology was not known and when specimens were available. Color photographs were assembled using Auto-Montage.

The label data are given only for the species that had not been listed in Pont and Werner (2006), since they provided detailed information for all specimens in their publication

The terminology follows Cumming and Wood (2017).

The species are listed under their current generic classification, and alphabetically by genus and within genus. All

material discussed here belongs to the ZMHU collection. Other collections referred to are the Natural History Museum, London, United Kingdom (BMNH), Naturalis Biodiversity Centre [formerly Rijksmuseum van Natuurlijke Historie], Leiden, The Netherlands (NBCL); Natural History Museum of the Benedictine Abbey, Admont, Austria (NMBA); Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI); Senckenberg Naturhistorische Sammlungen Dresden, Museum für Tierkunde, Dresden, Germany (SMT); Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia (ZIN).

TAXONOMY

Camptotarsopoda albibasis (Stein, 1913)

Figs 1–4

Syntypes. 2 males, 1 female. Tanzania and South Africa.

Diagnosis. Length of body. 5.0 mm (male), 4.5 mm (female). Head. Male holoptic with only one pair of frontal setae, close to lunule. Female with frons broad, about one-third of head-width at vertex. Frons and fronto-orbital plate dark brown. Parafacial, face and gena grey pollinose. Ocellar setae long. Eye enlarged; gena very narrow. Pedicel, postpedicel and arista dark brown. Postpedicel 2.5 times as long as wide, its tip rounded. Arista long, bare. Palpus dark brown, filiform. Thorax. Scutum brown, postpronotum and notopleuron partially grey pollinose. Dorsocentrals 2+4. 2 proepisternals. Katepisternum with only the posterior seta, which is preceded by many shorter setae, more numerous in male. Lower calypter about twice as long as the upper one. Haltere yellow. Calypters smoky brown with margins dark brown. Legs. Brown; coxae grey dusted; legs uniformly brown, fore and mid tibiae white on basal half; tarsomeres of fore leg uniformly brown. Fore femur with a complete row of setae on posterior and posterodorsal surfaces; ventral surface with setae in apical third. Fore tibia with 1 long posterior preapical seta. Mid femur with 2 anterior setae on middle third and 2 posterior preapicals; anterior surface with a submedian depression with a tuft of setae in male. Mid tibia with 1 dorsal and 1 ventral apical setae. First tarsomere of mid tarsus modified, with a ventral depression, with short stiff setae at apex. Hind leg long in male. Hind femur of male with anterodorsal and dorsal rows of setae, longer and more numerous on apical half. Hind tibia with 1 anterodorsal and 1 anteroventral row of setae, the ones on apical half longer. Arolium and pulvillus not enlarged. Wing. Uniformly smoky brown. Costal spine indistinct. Abdomen. Long, a little depressed dorsally. Grey pollinose with broad brown triangular lateral spots on tergites 1+2–4; tergite 5 with 2 brown round spots. Terminalia not enlarged.

Remarlks. *Camptotarsopoda* is restricted to the Afrotropical region, with five known species, all of them described by Stein (1913) in *Camptotarsus*. Usually they have 4 postsutural dorsocentrals (except *Camptotarsopoda nitida*) and at least the fore tibia is often partly creamy-white (except in *Camptotarsoposa pallipes*). The males of all species have the first tarsomere of mid tarsus modified, as a ventral depression, with short stiff setae at apex (Emden 1951, fig. 12). Malloch (1929) and Emden (1951) keyed the five species.

Camptotarsopoda annulitarsis (Stein, 1913)

Figs 5–8

Syntypes. 9 males, 10 females. Tanzania.

Diagnosis. Length of body. 4.0–4.5 mm (male), 3.5 mm (female). This species is very similar to the previous one, differing from it by the fore leg with white tarsomere joints and mid tibia of male with an anterior and a posterior row of fine setae, about as long as the tibial diamenter (Emden 1951, fig. 12).

Remarks. For comments on the genus, see the notes under *C. albitarsis*. Male and female redescribed and illustrated (terminalia and ovipositor) by Couri (2014).

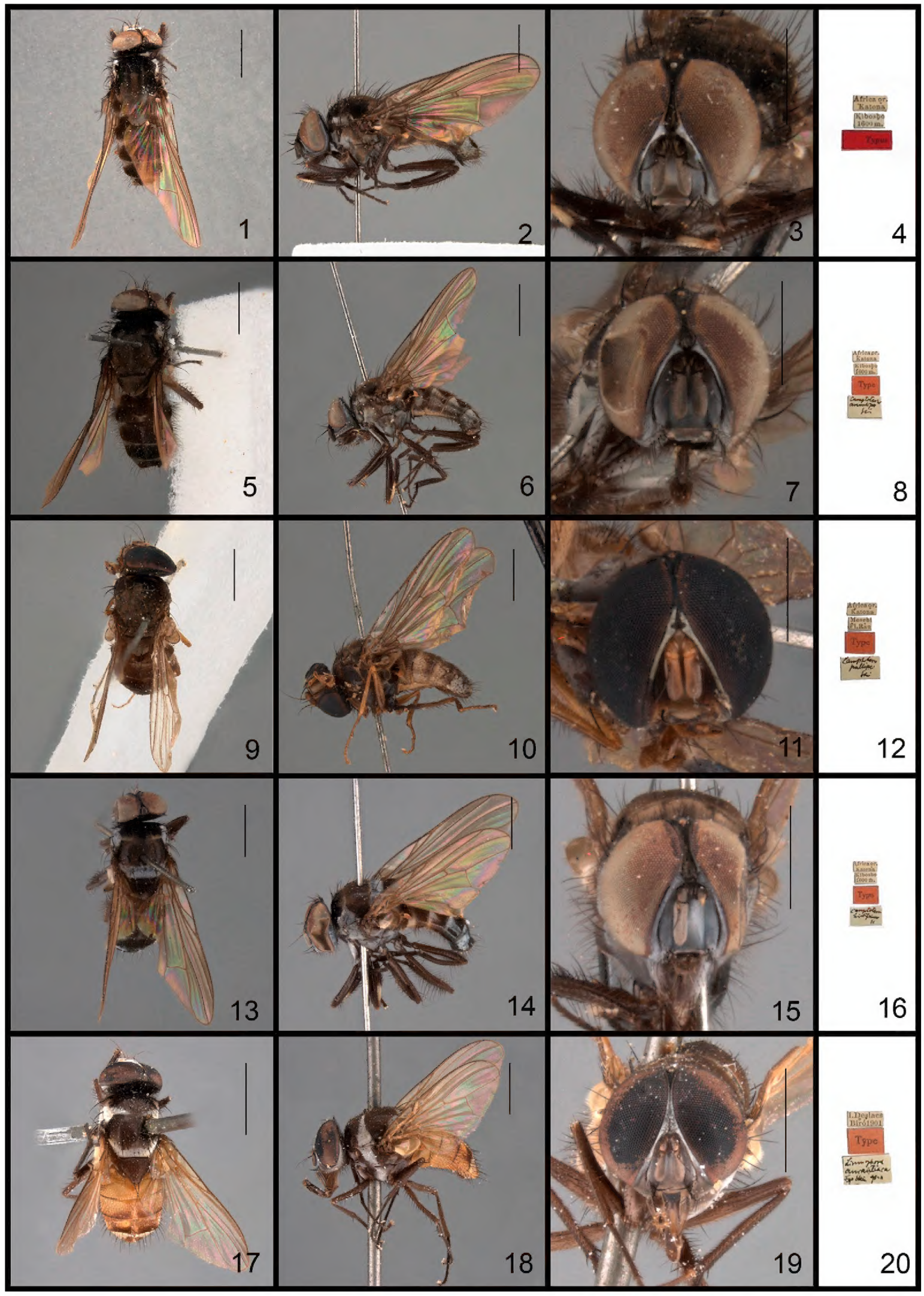
Camptotarsopoda pallipes (Stein, 1913)

Figs 9–12

Syntypes. 4 males, 1 female. Tanzania and South Africa.

Diagnosis. Length of body. 4.0–4.5 mm (male), 3.5 mm (female). Head. Male holoptic with only one pair of frontal setae, close to lunule. Female with frons broad, about one-third of head-width at vertex. Frons, fronto-orbital plate, parafacial, face and gena dark brown. 2–3 pairs of frontal setae. 2 pairs of reclinate orbitals. Ocellar setae long. Eye enlarged; gena very narrow. Pedicel orange-yellow, postpedicel half brown half yellow, longitudinally. Postpedicel 2 times as long as wide, its tip rounded. Arista long; bare. Palpus filiform, yellow. Thorax. Scutum uniformly brown. Dorsocentrals 2+4. 2 proepisternals, the outer one very long. Scutellum with subbasal lateral and apical setae long. Katepisternals 1+1, with 2–3 setae close to the posterior one. Haltere yellow. Calypters smoky brown with margins dark brown. Lower calypter about twice as long as the upper one. Legs. Mostly yellowish; femora brownish; tarsomeres of fore leg uniformly brown. Fore femur with a complete row of anteroventral and anterodorsal setae. Fore tibia with 1 short dorsal preapical seta. Mid femur with 3–4 anterior setae on middle third and 2 posterior preapicals. Mid tibia of male with short strong apical ventral setae. Hind femur of male with anterodorsal and dorsal rows of setae, longer and more numerous on apical half. Hind tibia with 2–3 long anterodorsal and posterodorsal setae on apical third. Tarsomeres not enlarged. Arolium and pulvillus not enlarged. Wing. Uniformly smoky brown. Costal spine indistinct. Abdomen. Short, a little depressed dorsally. Grey pollinose with broad brown triangular lateral spots on tergites 1+2–4; tergite 5 with 2 brown round spots; tergites 1+2 and 3 largely yellowish. Terminalia not enlarged.

Remarks. This can be recognized among its congeners by the yellowish colour of the legs, antenna and palpus and the colour pattern of scutum. For comments on the genus, see the notes under *C. albitarsis*. One syntype male from Tanzania, Moschi, vii.1905 dissected and illustrated (Figs 221–225).



Figures 1–20. *Camptotarsopoda albibasis*, syntype male: (1) dorsal habitus; (2) lateral habitus; (3) head in frontal view; 4. labels; *Camptotarsopoda annulitarsis*, syntype male: (5) dorsal habitus; (6) lateral habitus; (7) head in frontal view; (8) labels; *Camptotarsopoda pallipes*, syntype male: (9) dorsal habitus; (10) lateral habitus; (11) head in frontal view; (12) Labels; *Camptotarsopoda pilifemur*, syntype male: (13) dorsal habitus; (14) lateral habitus; (15) head in frontal view; 16. labels; *Heliographa aurantiaca*, syntype male: (17) dorsal habitus; (18) lateral habitus; (19) head in frontal view; (20) labels. Scale bars: 1.0 mm.

Camptotarsopoda pilifemur (Stein, 1913)

Figs 13–16

Syntype. Male. Tanzania.

Diagnosis. Length of body. 4.5 mm (male). This species is very similar to *C. albibasis* and *C. annulitarsis*, but has a very distinct colour pattern on scutum, with a transverse grey pollinose band in front of scutellum. Also the notopleuron is grey pollinose and the hind femur has long ventral setae on apical half that are curled at tips.

Remarks. For comments on the genus, see the notes under *C. albitarsis*.

Heliographa aurantiaca (Stein, 1915)

Figs 17–20

Syntype. Male. New Britain, Deslacs Island.

Diagnosis. Length of body. 5.5 mm (male). Head. Antenna and arista dark brown; arista short pubescent. Palpus yellow on basal half and brown on apical half. Thorax. Ground-colour of scutum brown with a grey-white pruinose transverse band presuturally and before scutellum, the presutural one extending laterally to notopleuron and interrupted in the middle by a brown area. Anepisternum white-grey dusted on longitudinal posterior half. Prosternum setulose. Anterior spiracle dark brown. Meron bare. Scutellum with lateral margins bare. Wing. R_{4+5} with 1 setula at base in both surfaces. Abdomen. Ground-colour orange-yellow, with a median white-dusted vitta. Sternite 1 setulose.

Remarks. Shinonaga and Pont (1988) redescribed this species and gave a key for the identification of the Melanesian species of *Heliographa* which includes *H. aurantiaca*.

Heliographa excellens (Stein, 1900)

Figs 21–24

Lectotype. Female. Lectotype designated by Pont (1969: 84). Papua New Guinea.

Diagnosis. Length of body. 5.0 mm (female). Head. Pedicel and postpedicel yellow. Arista dark brown; arista short pubescent. Palpus yellowish-brown. Mouth edge projected forward in lateral view. Thorax. Ground-colour of scutum brown with grey-white pruinose transverse band presuturally and before scutellum, the presutural one complete, not interrupted at middle. Pleura yellowish-grey dusted. Prosternum bare. Anterior spiracle dark brown. Meron bare. Scutellum with lateral margins bare. Wing. R_{4+5} at base with 2 setulae on dorsal side and 3–4 on ventral side. Abdomen. Ground-colour orange-yellow, with brown median and lateral spots on tergites 3–5. Sternite 1 with a few setulae.

Remarks. Shinonaga and Pont (1988) redescribed the male and female, illustrated the male terminalia, and gave a key for the identification of the Melanesian species of *Heliographa* which includes *H. excellens*.

Limnophora aculeipes Stein, 1913

Syntype. Male. Ethiopia.

Diagnosis. Length of body. 5.5 mm (male). Head. Frons of male about one-fourth of head-width. Antenna and arista brown, tip of postpedicel pointed. Palpus brown. Thorax. Scutum grey pollinose, with 3 brown vittae. Dorsocentrals 1+3. Intraalars 1+2. Lower katepisternal present and equidistant from the posterior and anterior setae. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae, 1 posterior and 1 posterodorsal. Mid tibia with 1 median posterior seta. Hind tibia with 1 long median anterodorsal seta and a short submedian anteroventral; without a posterodorsal seta. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare. Sternite 5 with the lobes very enlarged.

Remarks. This can be identified with the key by Emden (1951). The male terminalia were illustrated by Couri and Pont (2017, figs 9–12). The taxonomic status of the 3 subspecies recognised by Emden (1951) was recently changed (see Couri and Pont 2017).

Limnophora alacris Stein, 1911

Paralectotypes. 2 males. Lectotype in SMT, designated by Pont (2001: 462). Bolivia.

Diagnosis. Length of body. 6.0 mm (male). Head. Margins of male frons almost touching just below ocellar triangle. Antenna and arista brown, tip of postpedicel rounded. Palpus brown. Thorax. Scutum grey pollinose, with 3 brown vittae, not fused behind suture. Dorsocentrals 1+4. Intraalars 0+1. Lower katepisternal present and closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae, 1 posterior and 1 posterodorsal. Mid tibia with 1 median posterior seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae, both short; without a posterodorsal. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare. Terminalia not enlarged.

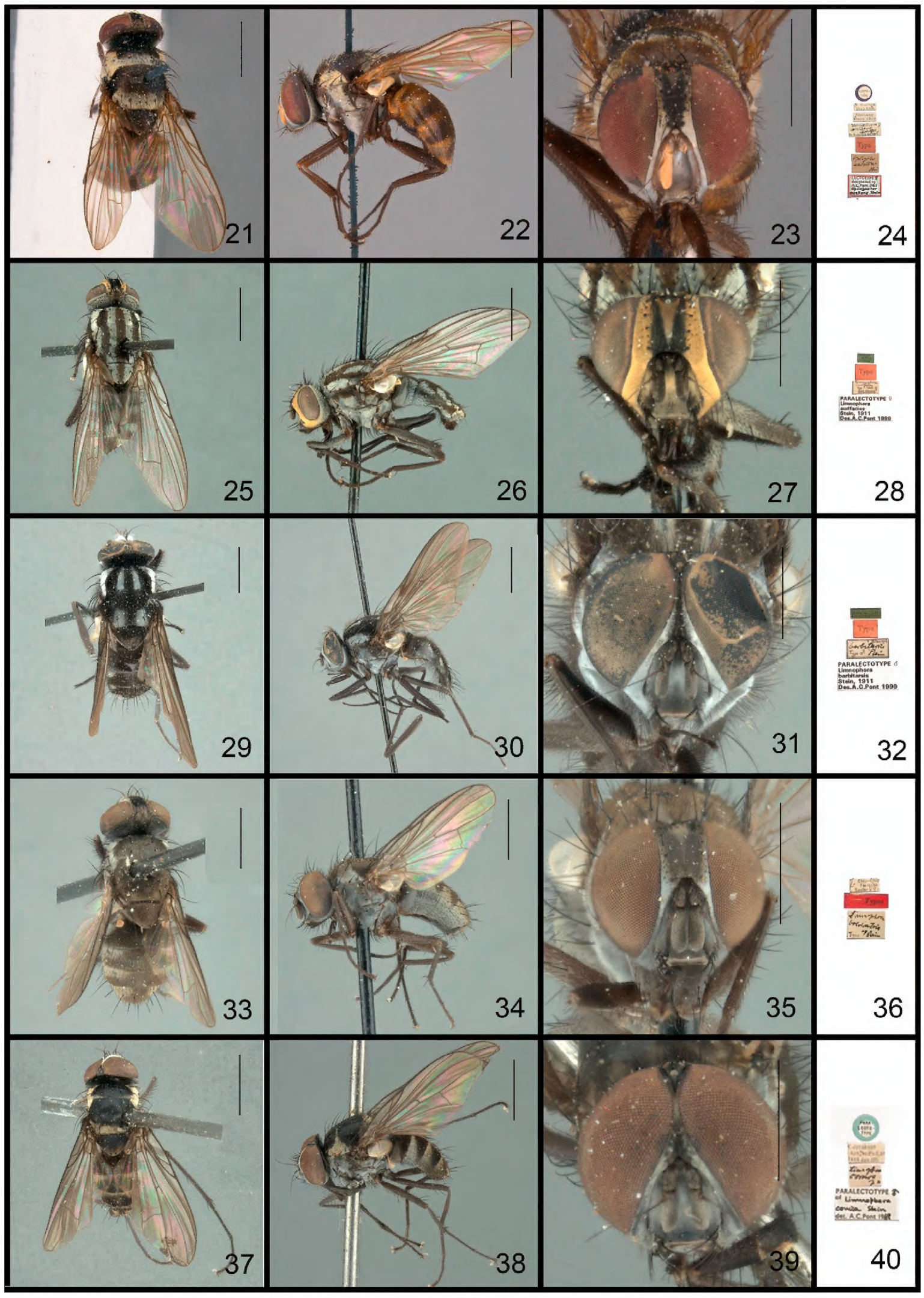
Remarks. This species can be identified with the key by Stein (1911).

Limnophora aurifacies Stein, 1911

Figs 25–28

Paralectotypes. 2 females. Lectotype in SMT, designated by Pont (2001: 464). Bolivia.

Diagnosis. Length of body. 5.2 mm (female). Head. Frons of female about one-third of head-width. Fronto-orbital plate, parafacial and gena golden pruinose. Antenna and arista dark brown, tip of postpedicel rounded. Palpus dark brown. Thorax. Scutum grey pollinose, with 3 brown vittae, the median one reaching tip of scutellum. Dorsocentrals 2+4. Intraalars 0+2. Lower katepisternal short and fine, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae, 1 posterior and



Figures 21–40. *Heliographa excellens*, lectotype male: (21) dorsal habitus; (22) lateral habitus; (23) head in frontal view; (24) labels; *Limnophora aurifacies*, paralectotype female: (25) dorsal habitus; (26) lateral habitus; (27) head in frontal view; (28) labels; *Limnophora barbitarsis*, paralectotype male: (29) dorsal habitus; (30) lateral habitus; (31) head in frontal view; (32) labels; *Limnophora breviventris*, syntype male: (33) dorsal habitus; (34) lateral habitus; (35) head in frontal view; (36) labels; *Limnophora conica*, paralectotype male: (37) dorsal habitus; (38) lateral habitus; (39) head in frontal view; (40) labels. Scale bars: 1.0 mm.

1 posterodorsal. Mid tibia with 1 median posterior seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae, both short; without a posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct.

Remarks. Keyed by Stein (1911). The male and the male terminalia were described and illustrated by Couri and Lopes (1986, figs 1–6). Patittucci et al. (2013) keyed and recorded the species for the first time from Argentina (Buenos Aires).

Limnophora barbitarsis Stein, 1911

Figs 29–32

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 465). Bolivia.

Diagnosis. Length of body. 8.0 mm (male). Head. Margins of male frons almost touching just below ocellar triangle. Fronto-orbital plate, parafacial and gena grey pruinose. Eye with some sparse hairs. Antenna and arista dark brown, tip of postpedicel rounded. Palpus dark brown. Thorax. Scutum grey pollinose, with 3 brown vittae before suture, joined in the middle as a transverse band after suture. Dorsocentrals 0+2. Intraalars 0+0. Lower katepisternum with only the posterior katepisternal seta developed. Haltere yellow. Calypters white, margins light brown. Legs. Fore tibia without a posterior seta. Fore tarsus with a complete dorsal row of moderate setae. Mid femur with 2 preapical setae, 1 posterior and 1 posterodorsal. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral, both short and fine; without a posterodorsal. Arolium and pulvillus very reduced. Wing. Smoky brown, darker on anterior margin. Costal spine indistinct.

Remarks. A very distinct species; the male can be immediately recognized by the dorsocentral setae and the row of setae on fore tarsus.

Limnophora beckeri (Stein in Becker, 1908)

Figs 226–229

Syntypes. 6 males, 9 females. Canary Islands.

Diagnosis. Length of body. 2.5 mm (male), 3.0–3.5 mm (female). Head. Male dichoptic, frons brown, less than one-third of head-width. Fronto-orbital plate, parafacial and gena grey pruinose. 2 pairs of reclinate orbital setae. Antenna and arista dark brown; postpedicel large, its tip rounded; arista a little enlarged at base. Palpus dark brown. Thorax. Scutum brown in male, grey pollinose on notopleuron and postpronotum. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal seta short and fine, closer to the posterior one. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 1 preapical seta. Mid tibia with 1 median posterior seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral, both short and fine; without a posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959). It has been more recently keyed by Xue et al. (2012). One syntype male from Orotava, with Becker's number 46898.I, dissected and illustrated.

Limnophora bipunctata (Stein in Becker, 1908)

Figs 230–233

Syntypes. 14 males, 9 females. Canary Islands.

Diagnosis. Length of body. 3.5–4.0 (male), 4.0–4.5 mm (female). Head. Male dichoptic, frons brown, less than one-third of head-width. Fronto-orbital plate, parafacial and gena grey pruinose. 1 pair of reclinate orbitals. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum largely brown, grey pollinose on two lateral areas above suture and above scutellum; seen from the front with two grey vittae presuturally. Postpronotum grey pollinose. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal short and fine, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 1 preapical seta. Mid tibia with 1 median posterior seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral, both short and fine; without a posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the key by Hennig (1959). One male syntype from Orotava, with Becker's number 46882.I, dissected and illustrated.

Limnophora breviventris Stein, 1915

Figs 33–36

Syntype. Male. Taiwan.

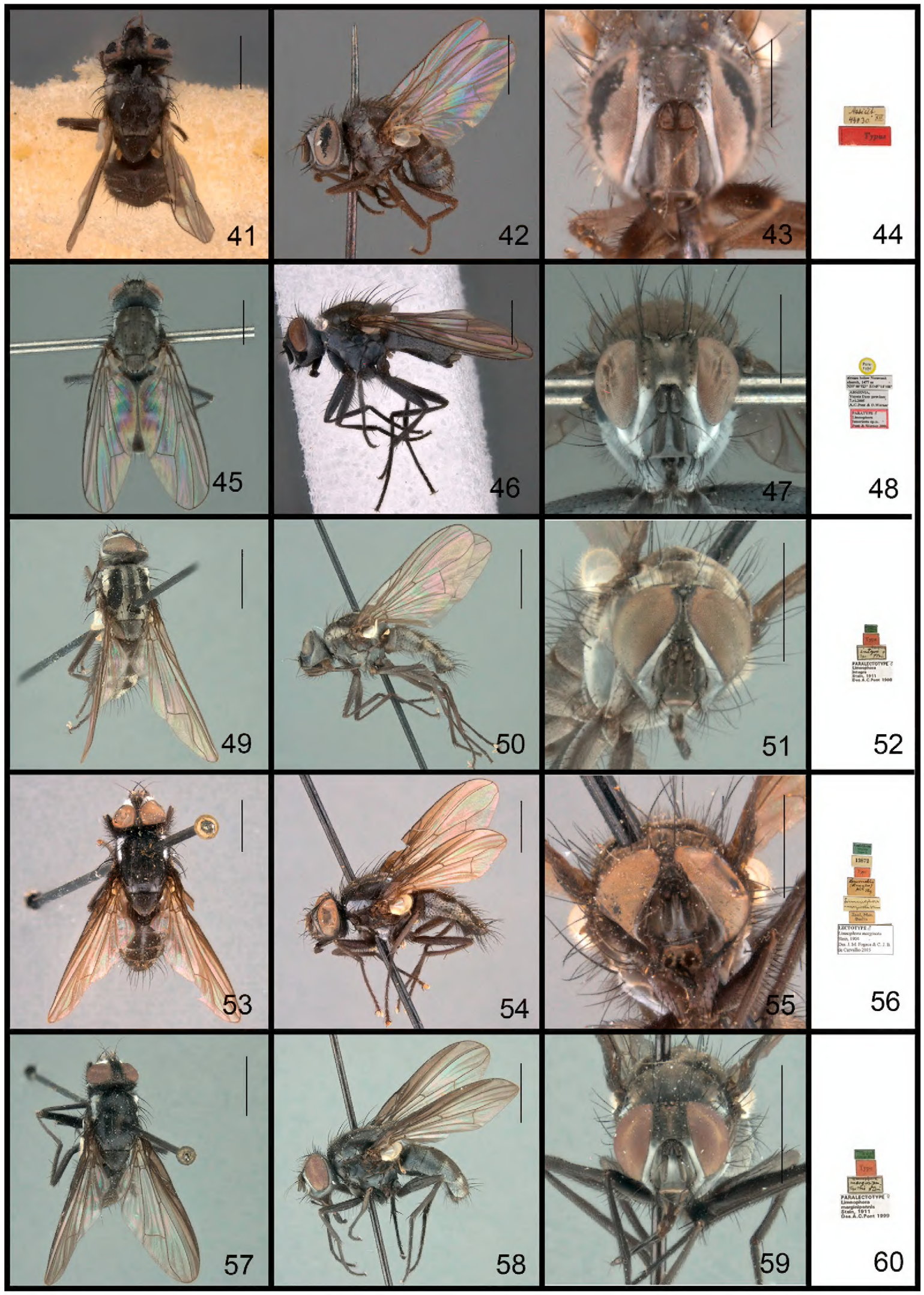
Diagnosis. Length of body. 4.8 mm (male). Head. Male dichoptic, frons brown, less than one-fourth of head-width. Fronto-orbital plate, parafacial and gena grey pruinose. 1 pair of reclinate orbitals. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum brown, grey pollinose on postpronotum and notopleuron. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal short and fine, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal; without anteroventral and posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Short. Sternite 1 bare.

Remarks. The species can be identified with the key by Xue et al. (2012).

Limnophora conica Stein, 1915

Figs 37–40

Paralectotypes. 3 males, 1 female. Lectotype in SDEI, designated by Pont (1970: 83). Taiwan.



Figures 41–60. *Limnophora exigua*, syntype male of *Limnophora plumiseta*: (41) dorsal habitus; (42) lateral habitus; (43) head in frontal view; (44) labels; *Limnophora femoriseta*, paratype male: (45) dorsal habitus; (46) lateral habitus; (47) head in frontal view; (48) labels; *Limnophora integra*, paralectotype male: (49) dorsal habitus; (50) lateral habitus; (51) head in frontal view; (52) labels; *Limnophora marginata*, syntype male: (53) dorsal habitus; (54) lateral habitus; (55) head in frontal view; (56) labels; *Limnophora marginipennis*, ?syntype female: (57) dorsal habitus; (58) lateral habitus; (59) head in frontal view; (60) labels. Scale bars: 1.0 mm.

Diagnosis. Length of body. 5.0–5.2 (male), 5.0 mm (female). Head. Male holoptic. Frons in female about one-third of head-width. Fronto-orbital plate, parafacial and gena grey pruinose. 2 pairs of reclinate orbitals in female. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Prescutum dark brown, grey pollinose laterally and on two lateral areas before suture; scutum with a broad transverse dark brown band before suture, reaching the last pair of dorsocentral setae; scutellum dark brown. Dorsocentrals 2+4. Intraalars 1+1. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Xue et al. (2012).

Limnophora conversa Stein, 1918

Syntype. Male. Madagascar.

Diagnosis. Length of body. 6.0 mm (male). Head. Male holoptic. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum dark brown, grey pollinose only on notopleural and postpronotal areas. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia with 1 posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species was included in the key to Madagascan *Limnophora* by Couri et al. (2006). See also Couri and Pont (2017) for diagnosis and notes.

Limnophora discreta Stein, 1898

Figs 234–237

Syntype. Male, 1 female. U.S.A.

Diagnosis. Length of body. 4.5 mm (male); 5.0 mm (female). Head. Male frons intermediate. Fronto-orbital plate, parafacial and gena silver pruinose. 1 pair of reclinate orbitals. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum grey pollinose, with 3 faint brown vittae, the median one reaching scutellum. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 1 preapical seta. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus a little enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. Keyed by Huckett (1932, in subgenus *Limnophora*) and again by Huckett (1965). One male from Coy Glen, USA, dissected and illustrated.

Limnophora elgonica Emden, 1951

Paratypes. 1 male, 2 females of ssp. *aethiopica* Emden, 1959. Ethiopia.

Diagnosis. Length of body. 3.8–4.2 mm (male), 5.0 mm (female). Head. Male frons intermediate. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 2 presutural dark brown spots fused anteriorly and separated posteriorly, a postsutural dark brown transverse band continuing as far as scutellum as a median line (usually interrupted in male); scutellum with a broad transverse dark brown band, grey pollinose on apical half (Emden 1951, fig. 24). Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus a little enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. *L. elgonica* can be identified with the key by Emden (1951). The male and female terminalia were figured by Emden (1951). See also Couri and Pont (2017) for diagnosis and notes.

Limnophora exigua (Wiedemann, 1830)

Figs 41–44

Syntypes. 2 males, 2 females of *Limnophora plumiseta* Stein in Becker, 1903, junior synonym of *L. exigua*. Egypt.

Diagnosis. Length of body. 2.5–3.5 mm (male, female). Head. Male dichoptic. Frons brown. Ocellar triangle shiny brown, reaching lunule. Fronto-orbital plate brown on upper half and grey pollinose on lower half. Parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip pointed. Palpus dark brown. Thorax. Scutum with 2 presutural dark brown spots fused anteriorly and separated posteriorly, a postsutural dark brown transverse band reaching posterior pair of dorsocentral setae; scutellum dark brown. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus small. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This can be identified with the keys by Emden (1951) and Hennig (1959) (both as *Limnophora plumiseta*) and by Couri et al. (2006). Sternite 5 and male terminalia illustrated by Couri and Pont (2017, figs 21–23). See also Couri and Pont (2017) for diagnosis and notes.

Limnophora fasciolata Stein, 1910a

Paralectotypes. 2 males, 3 females. Lectotype in BMNH, designated by Pont and Werner (2006: 46). Seychelles.

Diagnosis. Length of body. 2.5–3.5 mm (male, female). Head. Frons of male intermediate. Face brown. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 2 small presutural dark brown spots fused anteriorly and separated posteriorly, a postsutural dark brown transverse band reaching the third pair of dorsocentral setae; scutellum with a broad transverse dark brown band, grey pollinose on apical half. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal short, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal seta. Arolium and pulvillus small. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. See also Couri and Pont (2017) for Diagnosis.

Limnophora femoriseta Pont, Vikhrev & Werner, 2011

Figs 45–48

Paratype. Male. Armenia.

Diagnosis. Length of body. 4.0 mm. Head. Male frons broad, narrowing from vertex to lunule, brown. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum mostly dark brown, grey dusted along neck, on prostpronotum, notopleuron. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal very fine and closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without posterior seta. Mid femur with 2 preapical setae; with a posteroventral row of setae in addition to the usual few setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal seta; without anteroventral and posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The male terminalia were illustrated in Pont et al. (2011, figs 11–12). Pont et al. (2011) gave a key to the three Armenian species of the *Calliophrys*-group of *Limnophora* which includes *L. femoriseta*.

Limnophora flavibasis Stein, 1906

Holotype. Male. Cameroon.

Diagnosis. Length of body. 6.0 mm (male). Male holoptic. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 2 presutural dark brown spots fused anteriorly and separated posteriorly, a postsutural dark brown transverse band reaching the fourth pair of dorsocentral setae; scutellum dark brown, grey pollinose only at extreme tip. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal short and fine, closer to the posterior seta. Haltere yellow. Calypters smoky brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. See also Couri and Pont (2017) for diagnosis and notes.

Limnophora flavitarsis Stein in Becker, 1908

Syntypes. 1 male, 2 females. Canary Islands.

Diagnosis. Length of body. 4.8 mm (male, female). Head. Male frons broad, about one-fourth of head-width at vertex, brown. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 2 presutural separated dark brown spots; a postsutural dark brown transverse band reaching the fourth pair of dosocentral setae; scutellum dark brown. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal absent. Haltere yellow. Calypters white. Legs. Male fore tarsus yellow, the last two tarsomeres white-yellow ventrally. Fore tibia with a row of long posteroventral setae on apical half; without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 setulose.

Remarks. The male can be easily recognized by the yellow fore tarsus with the 2 last tarsomeres white-yellow ventrally and by the long posteroventral setae on apical half of fore tbia. It can be easily identified in the key by Hennig (1959). See also Couri and Pont (2017) for diagnosis and notes.

Limnophora iniqua (Stein, 1911)

Paralectotypes. 1 male, 1 female. Lectotype in SMT, designated by Pont (2001: 475). Chile.

Diagnosis. Length of body. 4.0–4.2 mm (male, female). Head. Male frons broad, narrowing from vertex to lunule. Frons, fronto-orbital plate, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip pointed. Palpus dark brown. Thorax. Scutum grey pollinose with 3 brown vittae, the 2 lateral ones wider and reaching the subbasal scutellar setae; scutellum grey pollinose. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal short, closer to the posterior one. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus short. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species has the characters of the Old World *Calliophrys*-group of *Limnophora*, with male frons broad and dorsocentrals 2+3.

Limnophora integra Stein, 1911

Figs 49–52

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 475). Bolivia.

Diagnosis. Length of body. 6 mm (male). Head. Male holoptic. Fronto-orbital plate, parafacial and gena dark grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 3 broad dark brown vittae, the median one reaching scutellar suture and the lateral ones reaching the fourth pair of dorsocentral setae; scutellum dark brown, grey pollinose on margins. Dorsocentrals 2+4, the 2 two anterior postsutural pairs very fine and short. Intraalars 1+1. Lower katepisternal long, closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species has the scutum with characteristic vittae and can be identified with the key by Stein (1911).

Limnophora laeta Stein, 1911

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 475). Chile.

Diagnosis. Length of body. 5.5 mm (male). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Frons brown. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Arista enlarged on basal third. Palpus dark brown. Thorax. Scutum with 3 brown vittae fused postsuturally as far as level of third dorsocentral seta; postpronotum and notopleuron grey dusted. Scutellum dark brown on disc, tip and lateral margins grey dusted. Dorsocentrals 2+4, the 2 anterior postsutural pairs short and fine. Intraalars 1+1. Lower katepisternal closer to the posterior seta. Haltere yellow. Calypters white, tip of the lower one smoky brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind femur with a posteroventral row of setae on basal half. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Stein (1911).

Limnophora latevittata Schnabl, 1911

Lectotype. Male. Paralectotypes. 4 males, 4 females (5 males, 5 females in Pont and Werner 2006, one pair could not be found). Lectotype of *Limnophora variabilis* Stein, 1916, junior synonym of *L. latevittata*. Designated by Hennig (1959: 383). Germany.

Diagnosis. Length of body. 4.5–5.0 mm (male, female). Head. Frons brown, intermediate in male. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 3 brown vittae fused postsuturally as far as level of third dorsocentral seta; postpronotum and notopleuron grey dusted. Scutellum dark brown. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal closer to the posterior seta. Katepisternum with some extra setae. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with Hennig's (1959) key to *Limnophora* (as *L. variabilis*). The male terminalia were illustrated by Lyneborg (1965, figs 7–9, as *L. variabilis*).

Limnophora marginata Stein, 1904

Figs 53–56

Lectotype. Male. Paralectotypes. 2 males, 2 females. Lectotype designated by Fogaça and Carvalho (2015: 211). Colombia.

Diagnosis. Length of body. 7.0 mm (male), 6.0 mm (female). Head. Male eye margins almost touching in middle line. Frons brown. Fronto-orbital plate, parafacial and gena brown-grey dusted. Gena produced. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum dark brown; with 2 lateral grey dusted spots before scutellar suture. Postpronotum and notopleuron grey dusted. Scutellum dark brown. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Smoky brown, darker on costal margin. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Stein (1904). The male terminalia and female ovipositor illustrated by Lopes and Couri (1987, figs 1–5) and the male also by Fogaça and Carvalho (2015, figs 1–3). In the keys by Patitucci et al. (2013) and Fogaça and Carvalho (2015).

Limnophora marginipennis Stein, 1911

Figs 57–60

Syntype. Female (?, see Pont and Werner 2006). Peru.

Diagnosis. Length of body. 8.0 mm (female). Head. Frons broad, about one-third of head-width. Fronto-orbital plate, parafacial and gena brown-grey dusted. Gena produced. Antenna and arista dark brown; postpedicel with tip rounded.

Arista short pubescent. Palpus dark brown. Thorax. Scutum dark brown; with 2 lateral grey dusted spots before scutellar suture. Postpronotum and notopleuron grey dusted. Scutellum dark brown. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal absent. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Smoky brown, darker on costal margin. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Stein (1911). The male terminalia and female ovipositor were illustrated by Lopes and Couri (1987, figs 6–11).

Limnophora mediterranea Pont, 2012

Paratype. Male. Armenia.

Diagnosis. Length of body. 4.0 mm (male). Head. Male dichoptic, frons about one-third of head-width, brown. Fronto-orbital plate, parafacial and gena grey pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 3 brown vittae, the lateral ones reaching the third pair of dorsocentral setae; the median one enlarged behind suture as far as level of third dorsocentral seta; scutellum with a brown spot at the base of each subbasal scutellar seta. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal seta absent. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine distinct. Abdomen. Sternite 1 bare.

Remarks. As stated in Pont et al. (2012), the species belongs to the *triangula*-group of *Limnophora* and is most similar to *Limnophora triangula* (Fallén, 1825a), sharing 2 pairs of reclinate orbital setae, 3 pairs of postsutural dorsocentral setae and a bare sternite 1. Pont et al. (2012) also gave a key to separate both species and illustrations of the male habitus and terminalia (Pont et al. 2012, figs 1–3, 5).

Limnophora narona (Walker, 1849)

Syntypes. 5 males, 4 females of *Limnophora cyrtoneurina* Stein, 1898, junior synonym of *L. narona*. U.S.A.

Diagnosis. Length of body. 5.0–6.0 mm (male), 5.0–5.5 mm (female) Head. Male eye margins almost touching on middle line. Female with frons broad, about one-third of head-width. Fronto-orbital plate, parafacial and gena brown-grey dusted. Antenna and arista dark brown; postpedicel with tip rounded. Arista short pubescent on basal half and bare on apical half. Palpus dark brown. Thorax. Scutum with 3 brown vittae fused postsuturally as far as level of fourth dorsocentral setae. Postpronotum and notopleuron grey dusted. Scutellum dark brown. Dorsocentrals 2+4. Intraalars 1+1. Lower katepisternal short and fine, closer to posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Base smoky brown. Vein M slightly curved upwards. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The arista with short pubescence only on basal half, bare on apical half, and the vein M slightly curved forwards help in the recognition of this species. Keyed by Huckett (1932, in subgenus *Limnophora*) and more recently by Patittucci et al. (2013). The male and female terminalia were illustrated by Lopes and Couri (1987, figs 12–17).

Limnophora nitidithorax (Stein, 1908)

Figs 61–64

Syntypes. 9 males, 10 females. Canary Islands.

Diagnosis. Length of body. 3.5–4.0 mm (male), 4.5–5.0 mm (female). Head. Male dichoptic, frons about one-third of head-width, brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum dark brown, with two lateral grey dusted areas before scutellar suture. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 1 preapical seta. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Smoky brown. Costal spine distinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Hennig (1959).

Limnophora obscurisquama Stein, 1908

Figs 65–68

Syntypes. 3 males, 2 females. Canary Islands.

Diagnosis. Length of body. 5.5–6.5 mm (male), 6.5–7.0 mm (female). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Female frons broad, about one-third of head-width. Frons, fronto-orbital plate, face, parafacial and gena brown; face dark grey dusted from certain angles. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Long and fine setae along oral margin. Thorax. Scutum brown, with 3 broad dark brown vittae. Postpronotum grey dusted. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal fine and closer to the long posterior seta. Katepisternum with short setulae on disc. Haltere yellow. Calypters brown, with margins dark brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Smoky brown. Costal spine distinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Hennig (1959).

Limnophora pallitarsis Stein, 1903

Figs 69–72

Holotype. Male. Egypt.

Diagnosis. Length of body. 3.5 mm (male). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena uniformly silvery-white pruinose. Antenna and arista dark brown; postpedicel almost reaching oral margin, its tip rounded. Palpus dark brown. Thorax. Scutum grey pollinose. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow, knob brown. Calypters white. Legs. Fore tibia without a posterior seta. Fore tarsomere 1 and posterior half of tarsomere 2 yellow. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. Abdomen. Sternite 1 setulose.

Remarks. The species is easily recognized by the silvery-white pruinose head, the partially yellow fore tarsomeres, and setulose sternite 1, and can be easily identified in the key by Hennig (1959).

Limnophora perfida Stein, 1913

Figs 73–76

Syntypes. 2 males, 1 female. Tanzania.

Diagnosis. Length of body. 6.0–7.0 mm (male, female). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Female with frons broad, about one-third of head-width. Frons brown. Fronto-orbital plate, face, parafacial and gena silver pruinose from certain angles. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Long and fine setae along oral margin. Thorax. Scutum brown, with grey dusted areas before scutellar suture and an area around the second presutural dorsocentral setae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal more or less equidistant from the anterior and posterior setae. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine distinct. Abdomen. Sternite 1 bare.

Remarks. Sternite 5 and the terminalia were illustrated by Couri and Pont (2017, figs 77–80). This species can be identified with the key by Emden (1951).

Limnophora pollinifrons Stein, 1916

Syntypes. 4 males, 5 females. Germany and Poland.

Diagnosis. Length of body. 3.5–4.0 mm (male, female). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena uniformly silver-white pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum grey pollinose, with very faint brown vittae in some specimens. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine short, but distinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Hennig (1959).

Limnophora prominens Stein, 1904

Figs 77–80

Paralectotypes. 2 females. Lectotype in NBCL, designated by Pont (1970: 99). Indonesia (Java).

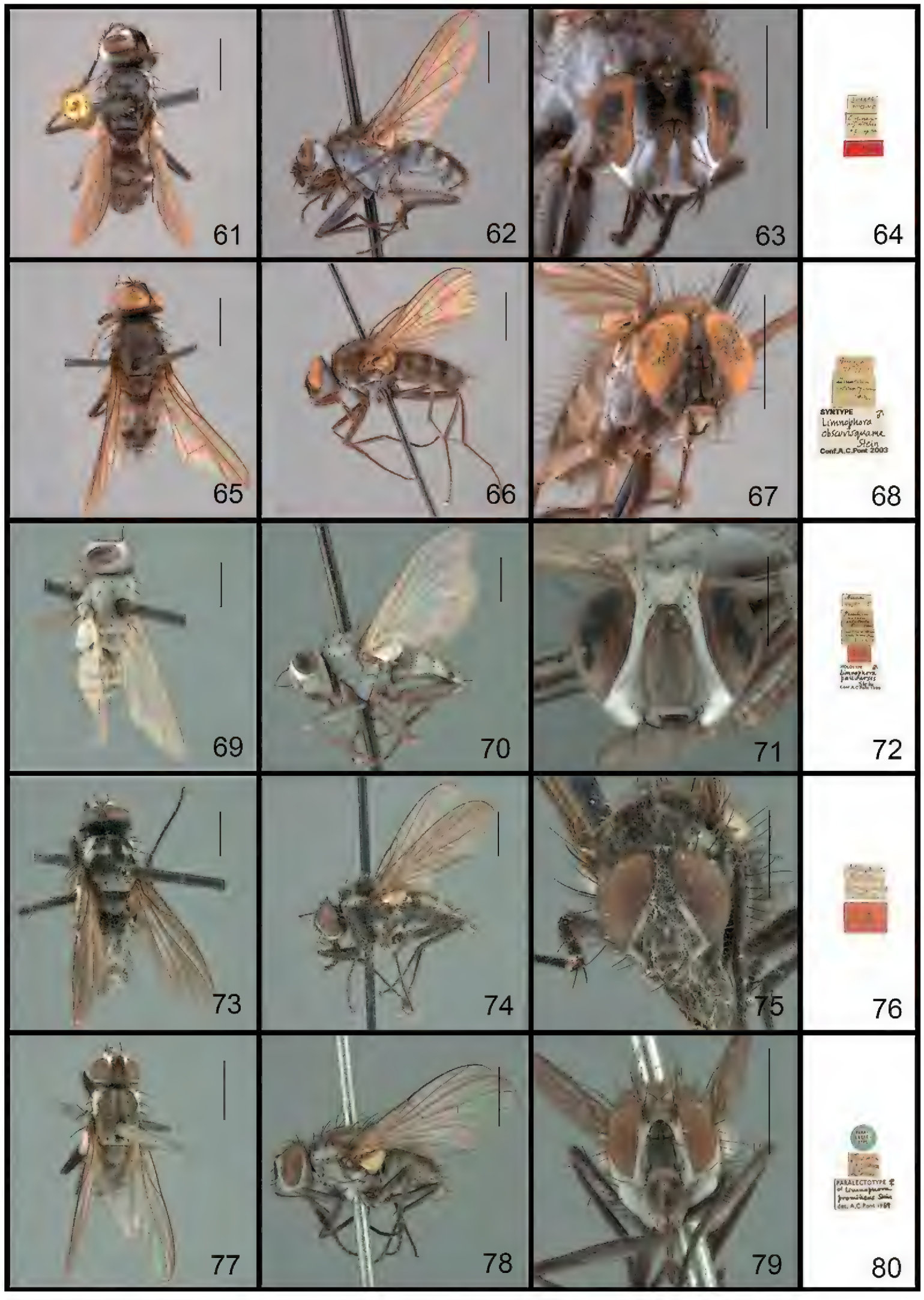
Diagnosis. Length of body. 6.0 mm (female). Head. Frons about one-third of head-width, brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Long and fine setae along oral margin. Thorax. Scutum grey dusted, with 3 brown vittae, the lateral ones larger. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal seta more or less equidistant from the anterior and posterior setae. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Xue et al. (2012).

Limnophora quaterna (Loew, 1852)

Holotype. Female of *Hylemyia quaterna* Loew, 1852. Mozambique. Syntypes. 19 males, 15 females of *Limnophora notabilis* Stein in Becker, 1903, junior synonym of *L. quaterna*. Egypt.

Diagnosis. Length of body. 4.5–5.0 mm (male, female). Head. Male frons intermediate; female frons broad, about one-third of head-width. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Arista short-plumose. Palpus dark brown. Thorax. Scutum in male with an *Anthomyia*-pattern; female pale grey dusted with 2 faint brown vittae on the middle part of the dorsocentral row of setae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+1. Lower katepisternal very fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae in middle third. Hind tibia with 1 short and fine median



Figures 61–80. *Limnophora nitidithorax*, syntype male: (61) dorsal habitus; (62) lateral habitus; (63) head in frontal view; (64) labels; *Limnophora obscurisquama*, syntype male: (65) dorsal habitus; (66) lateral habitus; (67) head in frontal view; (68) labels; *Limnophora pallitarsis*, holotype male: (69) dorsal habitus; (70) lateral habitus; (71) head in frontal view; (72) labels; *Limnophora perfida*, syntype male: (73) dorsal habitus; (74) lateral habitus; (75) head in frontal view; (76) labels; *Limnophora prominens*, paralectotype female: (77) dorsal habitus; (78) lateral habitus; (79) head in frontal view; (80) labels. Scale bars: 1.0 mm.

anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the keys by Emden (1951) and Hennig (1959), both as *L. notabilis*, and with the key by Couri et al. (2006) to the Madagascan species of *Limnophora*. The male terminalia were illustrated by Emden (1951, fig. 22).

Limnophora simulans Stein, 1913

Paralectotypes. 2 males, 2 females. Lectotype in BMNH, designated by Emden (1959: 191). Ethiopia and South Africa.

Diagnosis. Length of body. 4.0–4.5 mm (male), 4.5–5.0 mm (female). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Female frons broad, about one-third of head-width. Fronto-orbital plate, and parafacial brown. Gena grey dusted. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with an *Anthomyia*-pattern, dark postsutural band not connected to the dark scutellar band. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Emden (1951). The male terminalia were illustrated by Emden (1951, fig 23 a–f) and the male habitus by Couri and Pont (2017, fig. 7). See also Couri and Pont (2017) for diagnosis and notes.

Limnophora spoliata Stein, 1915

Syntypes. 2 males. Taiwan.

Diagnosis. Length of body. 4.8–5.0 mm (male). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Fronto-orbital plate and parafacial brown. Gena grey dusted from certain angles. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with an *Anthomyia*-pattern in both sexes, dark postsutural band not connected to the dark scutellar dark band. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 supramedian posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Smoky brown. Costal spine distinct. Abdomen. Sternite 1 bare.

Remarks. Included in the key by Xue et al. (2012). Xue and Tong (2003) gave a key to the Chinese species-groups of *Limnophora*, where the *spoliata*-group was included and was characterized by 3 postsutural dorsocentrals, frons at most 1/7 of head-width and orbital setae indistinct.

Limnophora steini (Carvalho & Pont, 1993)

Holotype male of *Limnophora atra* Stein, 1904, a junior primary homonym of *Limnophora atra* Robineau-Desvoidy, 1830, and renamed as *Syllimnophora steini* by Carvalho and Pont in Carvalho et al. (1993). Colombia.

Diagnosis. Length of body. 6.5 mm (male). Head. Male holoptic. Fronto-orbital plate, parafacial, face and gena uniformly brown. Antenna and arista dark brown; postpedicel with tip rounded. Arista pubescent. Palpus brown. Thorax. Scutum black. Posterior part of postpronotum and notopleuron grey dusted. Ground-setulae rather long. Dorsocentrals 2+4. Intraalars 1+1. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brownish, with margins darker. Legs. Brown. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 anterodorsal and 1 anteroventral setae; without posterodorsal. Arolium and pulvillus a little enlarged. Wing. Smoky brown, darker along costal margin. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be identified with the key by Stein (1911).

Limnophora suturalis Stein, 1915

Syntypes. 3 males, 4 females. Taiwan.

Diagnosis. Length of body. 5.5–6.0 mm (male, female). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle. Female frons broad, about one-third of head-width. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with an *Anthomyia*-pattern in both sexes, the dark postsutural band not connected to the dark scutellar band. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. Included in the key by Xue et al. (2012).

Limnophora tinctipennis Stein, 1910b

Syntypes. 2 males, 2 females. Sri Lanka.

Diagnosis. Length of body. 4.0 mm (male), 4.5 mm (female). Head. Male dichoptic, frons about one-third of head-width, brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum dark brown, with two lateral grey dusted areas before scutellar suture. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal more or less equidistant from

the anterior and posterior setae. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine distinct. Abdomen. Sternite 1 bare.

Remark. This species can be identified with the key by Emden (1965).

Limnophora translucida Stein, 1913

Syntypes. 3 males, 1 female. Ethiopia and South Africa.

Diagnosis. Length of body. 4.5–5.5 mm (male, female). Head. Male holoptic, eye margins almost touching on the middle line. Female frons broad, about one-third of head-width, brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum with 2 dark brown presutural spots, separated posteriorly or wholly fused, sometimes narrowly connected with the postsutural band on median line. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Basal abdominal segments yellow. Sternite 1 bare.

Remarks. This species can be identified with the key by Emden (1951). The male habitus and terminalia were illustrated by Couri and Pont (2017, figs 8, 112–115).

Limnophora uniseta Stein, 1916

Lectotype. Male. Paralectotype 1 female. Lectotype designated by Lyneborg (1965: 217). Sweden.

Diagnosis. Length of body. 5.5 mm (male), 6.0 (female). Head. Eyes of male separated by a distance similar to the width of the ocellar triangle, a little approximated on middle line. Female frons broad, about one-third of head-width. Fronto-orbital plate, parafacial and gena brown. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown. Thorax. Scutum dark brown. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Katepisternum with many setae on disc. Haltere yellow. Calypters white. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 median posterior setae. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Smoky brown. Costal spine distinct. Abdomen. Sternite 1 bare.

Remark. This species can be identified with the key by Hennig (1959).

Limnophora veniseta Stein, 1915

Paralectotypes. 2 males, 4 females. Lectotype in NBCL, designated by Pont (1970: 108). Indonesia (Java).

Diagnosis. Length of body. 2.7–3.0 mm (male), 3.0–4.0 mm (female). Head. Male dichoptic, frons about one-third of head-width, brown. Fronto-orbital plate, face, parafacial and gena brown. Antenna and arista dark brown; postpedicel very large, its tip rounded. Palpus dark brown. Thorax. Scutum dark brown. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Intraalars 1+2. Lower katepisternal fine and closer to the posterior seta. Haltere yellow. Calypters light brown. Legs. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 1 median posterior seta. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae; without posterodorsal. Arolium and pulvillus reduced. Wing. Costal spine distinct. Abdomen. Sternite 1 bare.

Remark. The species can be identified with the key by Malloch (1928).

Lispe albitarsis Stein, 1898

Lectotype. Male. Paralectotypes. 7 males, 9 females. Lectotype designated by Fogaça and Carvalho (2018: 2154). U.S.A.

Diagnosis. Length of body. 5.5–5.8 mm (male, female). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, face, parafacial and gena golden-silver pruinose. Male fronto-orbital plate and parafacial setulose. Antenna and arista dark brown; postpedicel with tip rounded. Palpus dark brown, gradually enlarged to apex. Vibrissa long. Thorax. Scutum dark brown. Postpronotum and notopleuron very faintly grey dusted. Dorsocentrals 2+3. Lower katepisternal strong, forming an equilateral triangle with the other two setae. Haltere yellow. Calypters white. Legs. Brown with coxae grey dusted. Tarsomeres 1–3 of fore leg yellow. Fore tibia with 1 posterior seta. Fore tarsus in male with tarsomeres 1–3 slender and mostly yellow; tarsomeres 4–5 broadened and infuscated. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior and 1 submedian anterodorsal setae; without an anteroventral. Hind tibia with 1 long median anterodorsal seta and 3–4 shorter supramedian; 1 median anteroventral seta and 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. Vein M straight at apex. Abdomen. Sternite 1 setulose.

Remarks. The species can be recognised by the differentiated shape and colour of the tarsomeres of fore leg. The Nearctic species were revised by Snyder (1954), who also presented a key to identification with which this species can be identified. It belongs to the *uliginosa*-group of *Lispe*, with a characteristic median basal plate on sternite 5 (Hennig 1960: text-fig. 120). Cercal plate (dorsal and lateral), sternite 5, aedeagal complex and ovipositor (lateral view) illustrated by Snyder (1954, figs 25, 40, 54, 68). Keyed by Vikhrev (2015) and more recently keyed, redescribed and illustrated by Fogaça and Carvalho (2018: figs 6a, 7a, 8a, 12a–f).

Lispe ambigua Stein, 1913

Syntype. Female. Ethiopia.

Diagnosis. Length of body. 6.3 mm (female). Head. Frons brown, broad, more than one-third of head-width. Fronto-orbital plate, face, parafacial and gena silver dusted. Fronto-orbital plate and parafacial setulose. Antenna and arista dark brown; tip of postpedicel rounded. Palpus yellow, strongly and abruptly dilated at apex. Vibrissa long. Thorax. Scutum grey dusted with 3 brown vittae, the median one reaching tip of scutellum. Scutellum grey dusted on margins. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+2. Lower katepisternal strong, forming an equilateral triangle with the other two setae. Haltere yellow. Calypters white. Legs. Mostly brown grey dusted; except for the yellow femoro-tibial joints and tibiae. Fore tibia without posterior seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal and 1 submedian anterodorsal setae; without an anteroventral. Hind tibia with 1 median anterodorsal seta, without anteroventral; 1 dorsal preapical. Arolium and pulvillus small. Wing. Costal spine distinct. Vein M straight at apex. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the keys by Stein (1913), Emden (1941) and Vikhrev (2016). The male genitalia and cercal plate were illustrated by Vikhrev (2016, figs 2 and 5). It belongs to the *ambigua*-group of *Lispe*, characterized by dorsocentrals 2+2; fore tibia without median seta; mid tibia with 1 posterodorsal and with or without anterodorsal; hind tibia with 1 anterodorsal seta and pulvillus small (Vikhrev 2016).

Lispe angustipalpis Stein, 1920a

Lectotype. Male. Designated by Pont (1970: 78). Indonesia (Java).

Diagnosis. Length of body. 5.3 mm (male). Head. Frons brown, broad, about one-third of head-width. Fronto-orbital plate, face and parafacial golden pruinose. Gena silver pruinose. Fronto-orbital plate and parafacial setulose. Antenna and arista dark brown; tip of postpedicel rounded. Palpus yellow on basal third and brown on apical half, gradually enlarged towards apex and not very dilated. Vibrissa long. Thorax. Scutum with 3 dark brown vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4, the first 2 postsutural pairs very short. Haltere yellow. Calypters white. Meron with short setulae above hind coxa. Legs. Coxae grey dusted, yellow posteriorly; femora brown, grey dusted, yellow at tip; tibiae yellow and tarsi brown. Fore tibia without posterior seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified in the keys by Vikhrev (2012a, 2016). Habitus illustrated by Vikhrev (2012a, figs 6 and 8). It belongs to the *pumila*-group of *Lispe*, characterized by dorsocentrals 2+4, the 4 anterior ones short; fore tibia without median seta; mid tibia with 1 posterodorsal; hind tibia with 1 anteroventral and 1 anterodorsal; meron with setulae above hind coxa; pulvillus small (Vikhrev 2016). In a more recent revision of the Australian species of *Lispe* by Pont (2019), the species was keyed and fully redescribed, and characters of the male and female terminalia were illustrated (Pont 2019, figs 473–480).

Lispe assimilis Wiedemann, 1824

Syntype. 1 male of *Lispe modesta* Stein, 1913, junior synonym of *Lispe assimilis*. Ethiopia.

Diagnosis. Length of body. 7 mm (male). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate shiny dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle narrow, brown. Fronto-orbital plate setulose. Antenna and arista brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa strong. Thorax. Scutum dark brown. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4, only the last 2 long. Haltere yellow. Calypters white. Legs. Brown grey dusted, femoro-tibial joints yellow; tibiae yellowish. Fore tibia without a posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal, 1 submedian anteroventral and 1 supramedian posterodorsal; 1 anterodorsal and 1 anteroventral preapical setae. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M curved forward at apex. Abdomen. Sternite 1 setulose.

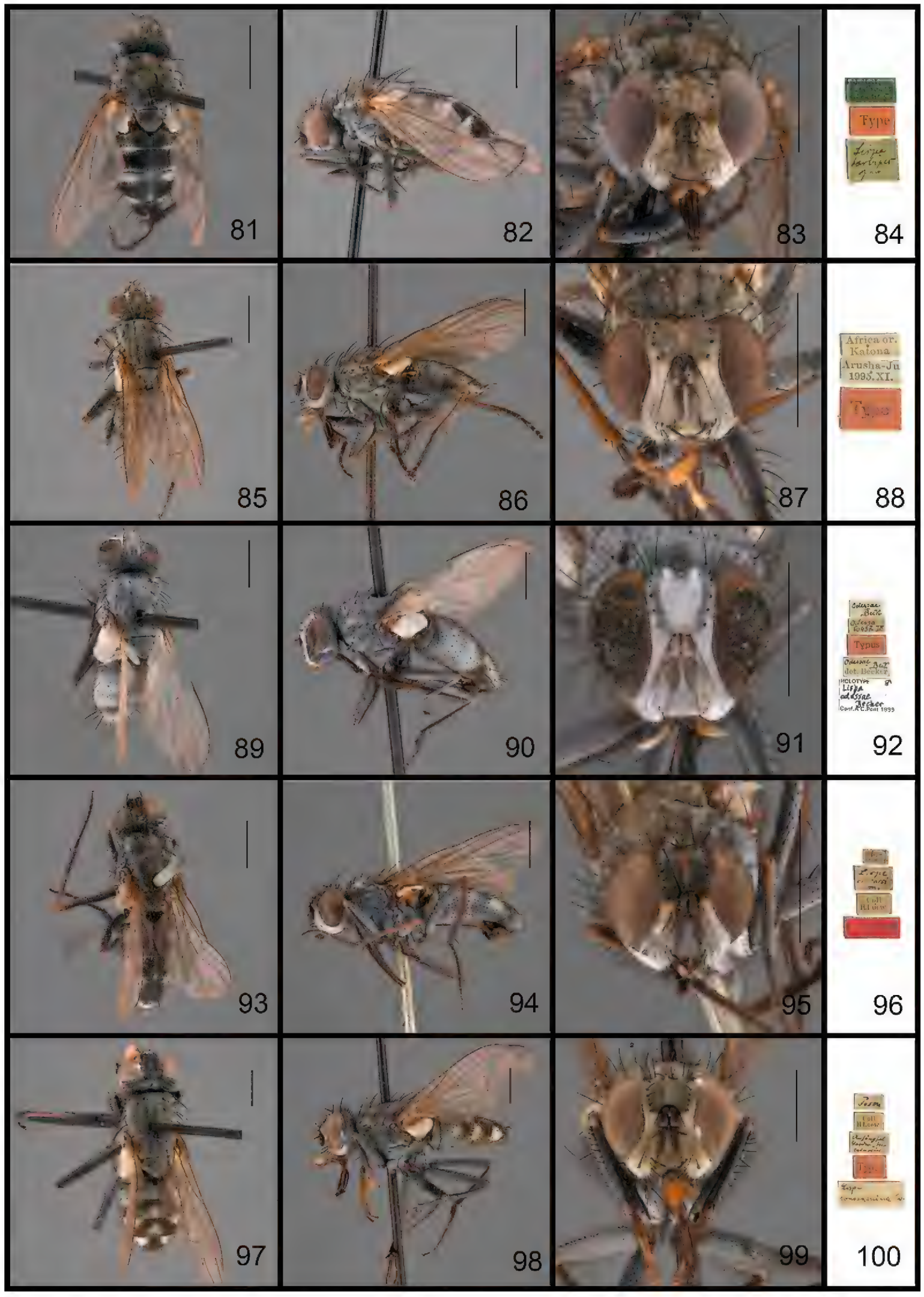
Remarks. It can be identified with the keys by Emden (1941, as *Lispe modesta*) to the Afrotropical species, by Hennig (1960) to the Palaearctic species, and by Pont (2019) to the Australian species of *Lispe*. Morphological characters and the male and female terminalia were illustrated by Pont (2019, figs 304–316).

Lispe barbipes Stein, 1908

Figs 81–84

Syntypes. 1 male, 1 female. Botswana.

Diagnosis. Length of body. 7.0 mm (male), 7.5 (female). Head. Male frons broad, rather more than one-third of head-width. Frons and fronto-orbital plate brown, pale dusted. Face, parafacial and gena silver pruinose. Fronto-orbital plate and parafacial setulose, especially densely close to lunule. Ocellar triangle golden pruinose, reaching lunule. Antenna and arista dark brown; tip of postpedicel rounded. Arista enlarged on basal half, with few hairs, confined to middle third, more numerous on dorsal surface. Palpus yellow, large, gradually enlarged towards apex; not spoon shaped. Vibrissa long. Thorax. Scutum dark brown, with faint traces of 3 brown vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Coxae brown grey dusted; mid tibia and basal half of hind tibia yellow. Fore tibia with a complete row



Figures 81–100. *Lispe barbipes*, syntype male: (81) dorsal habitus; (82) lateral habitus; (83) head in frontal view; (84) labels; *Lispe biseta*, syntype female: (85) dorsal habitus; (86) lateral habitus; (87) head in frontal view; (88) labels; *Lispa odessae*, holotype male: (89) dorsal habitus; (90) lateral habitus; (91) head in frontal view; (92) labels; *Lispe cilitarsis*, syntype male: (93) dorsal habitus; (94) lateral habitus; (95) head in frontal view; (96) labels; *Lispe consanguinea*, syntype male: (97) dorsal habitus; (98) lateral habitus; (99) head in frontal view; (100) labels. Scale bars: 1.0 mm.

of setae on posteroventral and posterorodorsal surfaces; 1 dorsal apical seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Male hind tibia with 1 anterodorsal, 1 anteroventral and 1 posterodorsal median setae; many long anteroventral to ventral setae on apical half, most of them with curled tips. Male hind first tarsomere also with long setae with curled tips in apical third. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. M slightly curved at apex towards R_{4+5}. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the key by Emden (1941), and the male can be easily recognized by the chaetotaxy of hind tibia. Vikhrev (2012b, 2014) keyed the species and included it in the *longicollis*-group of *Lispe*.

Lispe bengalensis (Robineau-Desvoidy, 1830)

Syntypes. 6 males, 4 females and 1 male, 2 females, respectively of *Lispa armipes* Becker, 1903 and *Lispa determinata* Becker, 1914, both junior synonyms of *L. bengalensis*. Egypt (*L. armipes*) and Taiwan (*L. determinata*).

Diagnosis. Length of body. 6.5–8.0 mm (male, female). Head. Male dichoptic, frons about one-third of head-width. Frons brown; fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle silver pruinose, reaching lunule. Male fronto-orbital plate with few setulae. Antenna and arista dark brown; bare on apical third. Palpus dark brown, abruptly dilated at apex. Vibrissa long; 1–2 long setae above vibrissa. Thorax. Scutum dark brown, with 2 lateral grey dusted areas on suture and before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Dark brown, with coxae grey dusted. Fore tibia without a median posterior seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without submedian anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 long dorsal in apical fourth; 1 preapical anterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be easily identified in the key by Hennig (1960) to Palaearctic *Lispe*, as *L. tetrastigma* Schiner, junior synonym of *L. bengalensis*. The male and female terminalia were illustrated by Hennig (1960, text-figs 93, 123, 143, plate 19 fig. 381, plate 20 fig. 401). Hennig (1960: 413) did not group this species. Pont (1991) and Couri et al. (2006) also keyed the species. In a more recent revision of the Australian species of *Lispe* by Pont (2019), the species was keyed and fully redescribed, and some external characters and the male and female terminalia were illustrated (Pont 2019, figs 448–459).

Lispe biseta Stein, 1913

Figs 85–88

Syntypes. 1 male, 1 female. Tanzania.

Diagnosis. Length of body. 7.0 mm (male, female). Head. Male frons broad, more than one-third of head-width. Frons and fronto-orbital plate brown. Face, parafacial and gena grey dusted. Fronto-orbital plate and parafacial setulose. Ocellar triangle straight, golden pruinose, reaching lunule. Antenna and arista dark brown; tip of pedicel yellow; tip of postpedicel rounded. Arista bare on apical third. Palpus yellow, large, gradually enlarging to apex. Vibrissa long. Thorax. Scutum dark brown, with 5 faint brown vittae, the median one reaching apex of scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+2. Haltere yellow. Calypters white. Legs. Coxae and femora brown grey dusted, tip of all femora yellow; tibiae yellow; tarsi yellowish-brown to yellow, mainly on ventral surface. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal seta; without anteroventral and posterodorsal; 1 preapical posterodorsal and 1 anterodorsal. Arolium and pulvillus small. Wing. Costal spine distinct. M straight at apex. Abdomen. Sternite 1 with very few lateral setae.

Remarks. The species can be identified with the keys by Stein (1913), Emden (1941) and Vikhrev (2016). The male habitus and sternite 4 and male terminalia were illustrated by Vikhrev (2016, figs 1 and 3). It belongs to the *ambigua*-group of *Lispe*, characterized by dorsocentrals 2+2; fore tibia without median seta; mid tibia with 1 posterodorsal and with or without anterodorsal; hind tibia with 1 anterodorsal seta and pulvillus small (Vikhrev 2016).

Lispe bivittata Stein, 1909

Paralectotypes. 1 male, 1 female. Lectotype in NBCL, designated by Pont (1970: 81). Indonesia (Java).

Diagnosis. Length of body. 4.8 mm (male), 5.0 mm (female). Head. Male frons dark brown, broad, more than one-third of head-width. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena golden pruinose. Fronto-orbital plate bare and parafacial with very few setulae. Ocellar triangle indistinct. Antenna and arista dark brown; postpedicel tip rounded. Arista bare on apical third. Palpus brown, abruptly enlarged towards apex. Vibrissa moderate. Thorax. Scutum brown, grey dusted anteriorly; 2 presutural broad brown lateral vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 0+4, the first 3 postsutural pairs very short and fine. Haltere yellow. Calypters white. Legs. Brown grey dusted, except femoro-tibial joints and basal half of hind tibiae which are yellow. Fore tibia without a posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 short median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 anterodorsal and 1 posterodorsal setae both median and short; without anteroventral; 1 preapical posterodorsal and 1 anterodorsal. Arolium and pulvillus reduced. Wing. Costal spine distinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the keys by Emden (1941, as *L. ochracea* Becker, junior synonym of *L. bivittata*), and by Hennig (1960). Hennig (1960: 413) did not group this species. Pont (1991) also keyed the species. Vikhrev (2014) keyed and illustrated the species, and assigned it to the *nivalis*-group of *Lispe*. Recently Ge et al. (2018) placed *Lispe guizhouensis* Wei, 2006 as a junior synonym of this species and gave illustrations of the male and female habitus, male hind tibia, male terminalia, and female abdominal sternites and spermatheca (Ge et al. 2018, figs 1–4).

Lispe brunnicosa Becker, 1904

Holotype. Male of *Lispa diminuata* Becker, 1913, junior synonym of *L. brunnicosa*. Tajikistan.

Diagnosis. Length of body. 7.0 mm (male). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and golden pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle indistinct. Fronto-orbital plate and parafacial setulose. Antenna brown, apical margin of pedicel yellow. Arista dark brown; bare on apical third. Palpus yellow, abruptly dilated in apical part. Vibrissa long. Thorax. Scutum dark brown. Dorsocentrals 2+3. Haltere yellow. Calypters white with yellow margins. Legs. Dark brown; femoro-tibial joints yellow. Fore tibia without a posterior to posterodorsal seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal seta; 1 submedian anterodorsal; without anteroventral seta. Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal setae; 2 dorsal preapicals; a row of ventral setae on apical third. Hind tarsomere 1 enlarged and setulose. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species can be identified with the key by Hennig (1960) to Palaearctic species of *Lispe*. The male terminalia were illustrated by Hennig (1960, text-fig. 148, plate 19 fig. 382, plate 20 fig. 408). Hennig (1960) did not group this species.

Lispe cilitarsis Loew, 1856

Figs 93–96

Syntype. Male. Egypt.

Diagnosis. Length of body. 7.0 mm (male). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and golden pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle golden pruinose, very straight and reaching lunule. Fronto-orbital plate and parafacial with few setulae. Antenna and arista dark brown; bare on apical third. Palpus yellow, gradually enlarged towards apex. Vibrissa long. Thorax. Scutum brown, with 2 wide dark brown lateral vittae. Postpronotum and notopleuron partially grey dusted. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Mostly brown; fore leg with femoro-tibial joint and basal half of the tibia yellow; mid and hind legs with tips of femora and all of tibiae yellow. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior seta; 1 submedian anterodorsal; without anteroventral seta. Hind tibia with 1 submedian anteroventral seta, 1 median posterodorsal; without anterodorsal; 1 dorsal preapical. Mid and hind tarsomere 1 with many short and fine ventral setae with curled tips. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M slightly curved forward towards R_{4+5} before apex. Abdomen. Sternite 1 with very few and short setulae.

Remarks. A distinctive species, the male can be easily recognized by the short and curled setae on tarsomere 1 on mid and hind legs. It can be identified with Hennig's (1960) key to Palaearctic *Lispe*. The male terminalia were illustrated by (Hennig 1960, text-figs 116, 144, plate 19 fig. 387, plate 20 fig. 411). It belongs to the *longicollis*-group of *Lispe* (Hennig 1960) and is characterized by the vein M distinctly curved forward at apex. Pont (1991) and Vikhrev (2012b) also keyed the species.

Lispe consanguinea Loew, 1858

Figs 97–100

Syntypes. 7 males, 3 females. Germany and Poland.

Diagnosis. Length of body. 6.0–7.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle weakly brown, straight and reaching lunule. Male fronto-orbital plate and parafacial with a few setulae. Antenna and arista dark brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex, very large at apex. Vibrissa long. Thorax. Scutum brown, with 5 faint vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Mostly brown; femoro-tibial joints yellow; tarsi yellow, mainly on ventral surface; fore tarsomere 1 with a dorsal finger-like projection. Fore tibia without a posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal, without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species can be identified with the key by in Hennig (1960) to Palaearctic *Lispe*. The male and female terminalia were illustrated by Hennig (1960, text-figs 92, 112, 130, plate 19 fig. 371, plate 20 fig. 406). It belongs to the *tentaculata*-group of *Lispe* (Hennig 1960), a group with very peculiar characters such as palpus very broad at apex, abruptly enlarged; lower katepisternal fine and closer to the posterior one; fore tibia without median seta; mid tibia without anteroventral, but with 1 posterodorsal; male tarsomere of fore leg with a ventral finger-like projection. It can also be identified with the keys by Vikhrev (2011a and 2014) to the Palaearctic species of the *tentaculata*-group. The cercal plate was illustrated by Vikhrev (2011a, fig 1.1).

Lispe desjardinsii Macquart, 1851

Syntypes. 1 male, 2 females of *Lispa remipes* Becker, 1913, junior synonym of *L. desjardinsii*. Madagascar.

Diagnosis. Length of body. 6.0 mm (male), 6.5–7.0 mm (female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle golden pruinose, straight and reaching lunule. Male fronto-orbital plate setulose; parafacial with 2–3 scattered setulae. Antenna and arista dark brown; bare on apical third. Palpus yellow, enlarged towards apex. Vibrissa long. Thorax. Scutum brown. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Mostly brown; femoro-tibial joints and tibiae yellow. Fore tibia with 1 dorsal and 1 ventral median setae. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal seta, 1 submedian anteroventral and 1 median posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key by Couri et al. (2006) to Madagascan species of *Lispe*. The male fore tarsus was illustrated by Couri et al. (2006, fig. 101). Vikhrev (2014) also keyed the species and considered it in the *desjardinsii*-group of *Lispe*.

Lispe dichaeta Stein, 1913

Syntypes. 2 males, 1 female. Ethiopia and South Africa.

Diagnosis. Length of body. 5.5 mm (male), 6.0 mm (female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate and parafacial golden pruinose. Face and gena silver pruinose. Ocellar triangle large, golden pruinose, reaching lunule. Male fronto-orbital plate setulose, with 1–3 strong setae at lower end; parafacial setulose, with 1 long seta close to gena. Antenna brown, with apex of pedicel and base of postpedicel yellow. Arista dark brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex; its apex silver pollinose from certain angles. Vibrissa long. Thorax. Scutum uniformly brown. Dorsocentrals 1+2. Haltere yellow. Calypters white. Legs. Coxae and femora brown, grey pollinose; tibiae and tarsi yellow. Fore tibia with 1 dorsal submedian seta and 5 short dorsal to anterodorsal supramedian setae; 1 median posteroventral seta, fine in male. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; 1 anterodorsal; without anteroventral setae. Hind tibia with 1 median anterodorsal, 1 submedian anteroventral and 1 median posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the keys by Stein (1913), Emden (1941) and Vikhrev (2016), and by Couri et al. (2006) to Madagascan species of *Lispe*. The head and cercal plate were illustrated by Vikhrev (2016, figs 9–10). It belongs to the *dichaeta*-group of *Lispe*, characterized by dorsocentrals 1+2; fore tibia with 1 dorsal and 1 posteroventral setae; mid tibia with 1 posterodorsal and with 1 anterodorsal; hind tibia with 1 anterodorsal, 1 anteroventral and 1 posterodorsal setae (Vikhrev 2016).

Lispe elkantarae Becker, 1907

Figs 238–241

Syntypes. 3 males, 8 females. Algeria.

Diagnosis. Length of body. 5.5 mm (male), 6.5–7.5 mm (female). Head. Male dichoptic, frons one-third of head-width. Frons dark brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle golden pruinose, reaching lunule. Male fronto-orbital plate and parafacial setulose. Antenna dark brown; apex of pedicel and base of postpedicel yellow. Arista short, dark brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex; apex very large. Vibrissa very short and fine. Thorax. Scutum brown, grey pollinose. Postpronotum and notopleuron light grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Mostly brown; femoro-tibial joints yellow; tarsi yellowish, mainly on ventral surface. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal and 1 anterodorsal setae; without anteroventral. Hind tibia with no median differentiated seta; 1 dorsal preapical. Arolium and pulvillus short. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the keys by Hennig (1960) and Vikhrev (2015). It belongs to the *palposa*-group of species (Hennig 1960), with palpus very broad at apex, abruptly enlarged; vibrissa short or absent; katepisternals developed and arranged as an equilateral triangle; fore tibia with or without median seta; mid tibia with anterodorsal; hind tibia without anteroventral and posterodorsal. Cercal plate illustrated by Vikhrev (2015, fig. 2). One male syntype from El-Kantara, Becker number 52660, v/1905, 500 m dissected and illustrated.

Lispe geniseta Stein, 1909

Paralectotype. Male. Lectotype in NBCL, designated by Pont (1970: 89). Indonesia (Java).

Diagnosis. Length of body. 6.0 mm (male). Head. Frons brown, broad, about one-third of head-width. Fronto-orbital plate, face, parafacial and gena silver pruinose. Fronto-orbital plate and parafacial setulose. Antenna dark brown; apex of pedicel and base of postpedicel yellow. Postpedicel with tip rounded. Arista brown; bare on apical third. Palpus yellowish-brown, abruptly enlarged towards apex. Vibrissa long and strong. Lower parafacial with a long seta inserted at the same level as vibrissa. Thorax. Scutum grey dusted with 3 brown vittae, the median one reaching apex of scutellum. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Coxae grey dusted, trochanters yellow; femora dark brown,

yellow at tip; tibiae and tarsi yellow. Fore tibia without posterior seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 median anterodorsal, 1 submedian anteroventral and 1 posterodorsal setae; 1 dorsal preapical. Arolium and pulvillus enlarged. Wing. Costal spine distinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species can be identified in the key by Vikhrev (2016). It belongs to the *geniseta*-group of *Lispe*, characterized by dorsocentrals 2+3; fore tibia with median seta; mid tibia with 1 posterodorsal and 1 anterodorsal setae; hind tibia with 1 anteroventral, 1 anterodorsal and 1 posterodorsal setae; lower parafacial with a strong seta and pulvillus enlarged (Vikhrev 2016). Male habitus and cercal plate illustrated by Vikhrev (2016, figs 12, 13, 15, 18). See discussion on the *geniseta*-group of species in Vikrev (2016) and Pont (2019).

Lispe halophora Becker, 1913

Syntypes. 4 males, 1 female. Egypt.

Diagnosis. Length of body. 5.5–6.0 mm (male), 6.5 mm (female). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle broad, silver pruinose, with convex margins and reaching lunule. Male fronto-orbital plate and parafacial almost bare. Antenna and arista dark brown; arista bare on apical third. Palpus brown, abruptly dilated in apical portion. Vibrissa moderate. Thorax. Scutum dark brown, with 2 lateral grey dusted areas close to suture and before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Lower katepisternal strong, forming an equilateral triangle with the other two setae. Haltere yellow. Calypters white. Legs. Brown, grey dusted; femoro-tibial joints yellow; tarsomeres yellow ventrally. Fore tibia with 1 median posterior seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior seta; 1 submedian anterodorsal; without anteroventral seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; 1 long dorsal in apical fourth; 1 preapical anterodorsal; basal half with a series of setae on anterodorsal and posterodorsal surfaces. Hind tarsomere 1 enlarged and setulose. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. A very distinctive species, it can be recognized by the broad and silver dusted ocellar triangle and the modified hind tarsomere 1. It can be identified with the key by Hennig (1960) to Palaearctic *Lispe*. It belongs to the *caesia*-group of *Lispe* (Hennig 1960).

Lispe kowarzi Becker, 1903

Syntypes. 9 males, 7 females. Egypt. Paralectotype 1male of *Lispa pallitarsis* Stein, 1909, ranked as a subspecies of *Lispe kowarzi* by Vikhrev (2014). Lectotype in NBCL, designated by Pont (1970: 98). Indonesia (Java).

Diagnosis. Length of body. 3.5–4.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate shiny dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle shiny dark brown, reaching lunule. Male fronto-orbital plate and parafacial with few setulae. Antenna and arista brown; bare on apical third. Palpus brown, abruptly enlarged towards apex. Vibrissa strong. Thorax. Scutum dark brown, a little shiny. Dorsocentrals 1+3, the first postsutural seta very short. Haltere brownish. Calypters white. Legs. Brown; tarsi yellowish, mainly the ventral surface of posterior tarsomeres. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal and 1 anterodorsal setae; without anteroventral. Hind tibia with 1 median anterodorsal, 1 anteroventral and 1 posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key by Hennig (1960) to Palaearctic *Lispe*. The male and female terminalia were illustrated by Hennig (1960, text-figs 84, 121, 142, plate 19 fig. 377, plate 20 fig. 400). Hennig (1960: 413) did not group this species. Vikhrev (2014) also keyed the species and assigned it to a *kowarzi*-group of *Lispe*.

Lispe leucocephala Loew, 1856

Figs 101–104

Syntypes. 2 males, 1 female. Egypt.

Diagnosis. Length of body. 4.0–4.5 mm (male, female). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle broad, silver pruinose, with convex margins and reaching lunule. Male fronto-orbital plate and parafacial almost bare. Antenna dark brown; postpedicel very short. Arista short, dark brown; bare on apical third. Palpus yellow, abruptly dilated in the apical portion which is densely silver pruinose. Vibrissa absent. Thorax. Scutum grey dusted. Dorsocentrals 2+3. Lower katepisternal strong, forming an equilateral triangle with the upper two setae. Haltere yellow. Calypters white. Legs. Brown, grey dusted; tarsi yellowish brown. Fore tibia with 1 posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anteroventral seta; without anterodorsal and posterodorsal setae; 1 long dorsal in apical fourth; 1 preapical anterodorsal. Hind tarsomere 1 enlarged and setulose. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be recognized by the broad and silver pruinose ocellar triangle; very short antenna; absence of vibrissa; palpus densely silver pruinose at apex; and hind tarsomere 1 enlarged and setulose. It can be identified with the

key by Hennig (1960) to Palaearctic *Lispe*. The hind tarsomere 1 was illustrated by Hennig (1960, text-fig. 97). It belongs to the *caesia*-group of *Lispe* (Hennig 1960).

Lispe levis Stein, 1911

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 476). Chile.

Diagnosis. Length of body. 6.5 mm (male). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle brown, reaching lunule. Fronto-orbital plate and parafacial with many setulae. Antenna brown, apex of pedicel and base of postpedicel yellow. Arista brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex; densely silver pruinose. Vibrissa strong. Thorax. Scutum brown, grey pollinose, with 5 faint brown vittae. Postpronotum and notopleuron pale dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Coxae and femora brown grey pollinose; posterior surface of coxae and apex of femora yellow; tibiae and tarsi yellow. Fore tibia with 1 posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. Keyed by Vikhrev (2015) and more recently keyed, redescribed and illustrated by Fogaça and Carvalho (2018, figs 2b, 2d, 2e, 3b, 4b, 5c, 5d, 10b, 14a–e).

Lispe maculata Stein, 1913

Figs 105–108

Syntype. Female. Zimbabwe.

Diagnosis. Length of body. 5.0 mm (female). Head. Frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate shiny dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle brown, reaching lunule. Antenna brown, pedicel paler at tip. Postpedicel very long, reaching oral margin. Arista brown, bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa moderate. Thorax. Scutum dark brown, blue-grey pollinose, with 3 broad brown vittae, the median one reaching tip of scutellum. Postpronotum and notopleuron paler dusted. Dorsocentrals 1+4, the first 2 postsutural pairs very short. Haltere yellow. Calypters white. Legs. Brown; femoro-tibial joints yellow. Fore tibia with 1 posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anteroventral and anteroventral setae. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 bare.

Remarks. This can be identified in the key by Emden (1941) to Afrotropical *Lispe*. Vikhrev (2014) keyed and illustrated the species and placed it in the *leucospila*-group of *Lispe*.

Lispe marina Becker, 1913

Syntypes. 3 females. France.

Diagnosis. Length of body. 6.5–7.0 mm (female). Head. Frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate, face, parafacial and gena silver-golden pruinose. Ocellar triangle golden, reaching lunule. Fronto-orbital plate and parafacial with many setulae. Antenna with pedicel and basal half of postpedicel yellow; apical half of postpedicel brown. Arista brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa moderate. Thorax. Scutum brown with 2 faint dark brown vittae presuturally. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown, femoro-tibial joints yellow. Fore tibia with 1 long posterior median seta; 1 anteroventral to ventral and 1 dorsal apical seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 long median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal and 2 submedian anteroventrals; without posterodorsal; 1 dorsal preapical; 1 anterior and 2 ventral apical setae. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

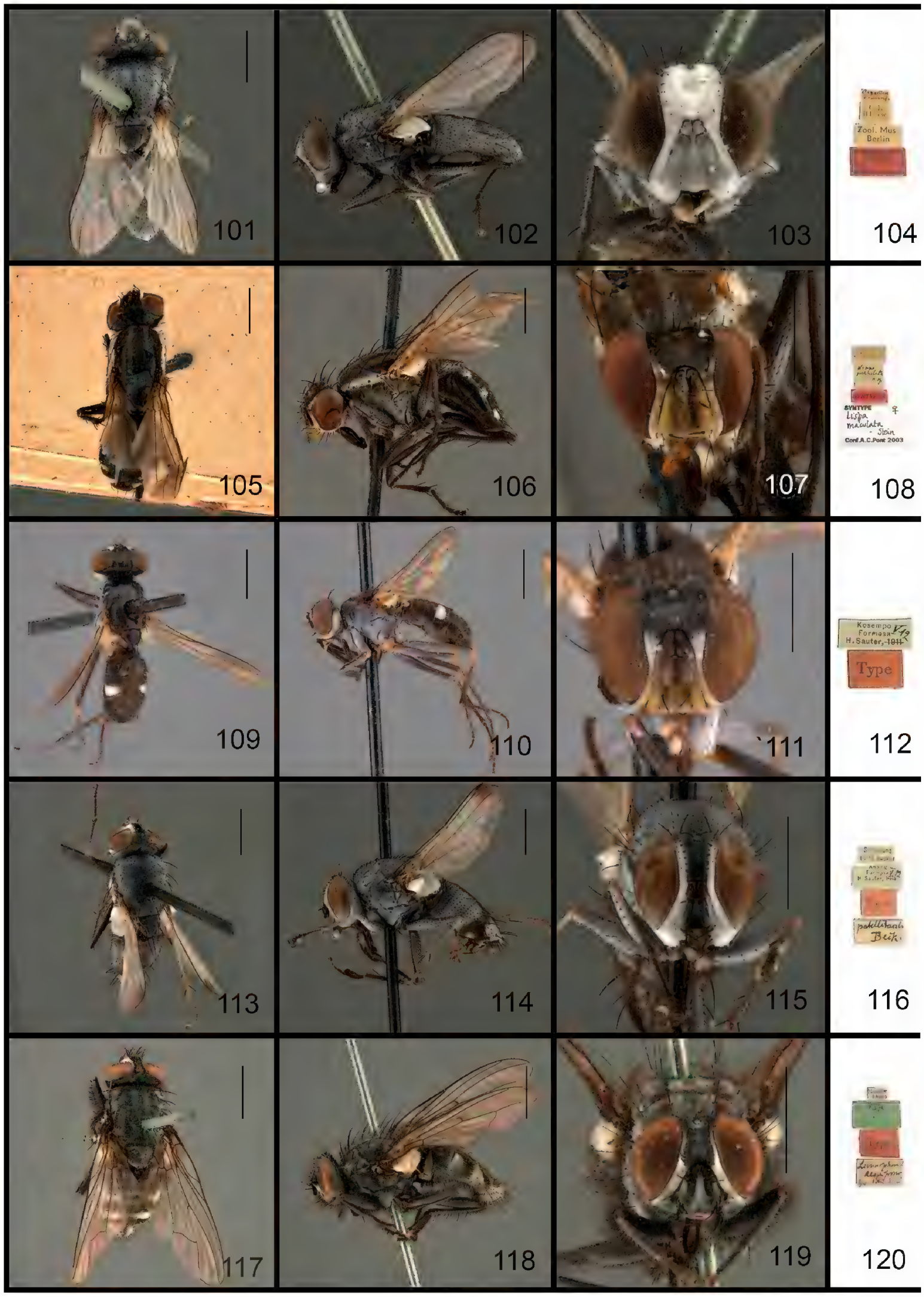
Remarks. This species can be recognized by the colour of the antenna and the presence of 2 anteroventral setae on hind tibia. It also can be identified in the key by Hennig (1960) to Palaearctic *Lispe*.

Lispe melaleuca Loew, 1847

Syntypes. 4 males, 2 females. Italy (Sicily).

Diagnosis. Length of body. 4.5–5.5 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate and parafacial setulose. Antenna brown, apex of pedicel yellow. Arista brown; bare on apical third. Palpus yellow, gradually enlarged towards apex. Vibrissa strong. Thorax. Scutum dark brown, a little shiny. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Lower katepisternal strong, forming an equilateral triangle with the upper two setae. Haltere brownish. Calypters white. Legs. Mostly brown, tibiae yellow. Fore tibia with 1 posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal and 1 anterodorsal setae; without anteroventral. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral; without posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key by Hennig (1960) to Palaearctic *Lispe*. The male and female terminalia were illustrated by Hennig (1960, text-figs 87, 126, 134, plate 19 fig. 379,



Figures 101–120. *Lispe leucocephala*, syntype male: (101) dorsal habitus; (102) lateral habitus; (103) head in frontal view; (104) labels; *Lispe maculata*, syntype female: (105) dorsal habitus; (106) lateral habitus; (107) head in frontal view; (108) labels; *Lispe nicobarensis*, syntype male of *Lispa binotata*: (109) dorsal habitus; (110) lateral habitus; (111) head in frontal view; (112) labels; *Lispe patellitarsis*, syntype male: (113) dorsal habitus; (114) lateral habitus; (115) head in frontal view; (116) labels; *Lispoides aequifrons*, syntype male: (117) dorsal habitus; (118) lateral habitus; (119) head in frontal view; (120) labels. Scale bars: 1.0 mm.

plate 20 fig. 402). Hennig (1960) placed it with some doubts in his *uliginosa*-group of *Lispe*. It was also keyed and illustrated by Vikhrev (2015), who confirmed its position in the *uliginosa*-group.

Lispe metatarsata Stein, 1900

Lectotype. Male. Designated by Pont (1969: 86). Paralectotype. 1 male. Papua New Guinea.

Diagnosis. Length of body. 5.0 mm (male). Head. Male dichoptic, frons broad, about one-third of head-width. Frons, fronto-orbital plate and face silver pruinose. Parafacial and gena yellowish silver pruinose. Ocellar triangle broad, silver pruinose, reaching lunule. Fronto-orbital plate setulose. Antenna with pedicel yellow; postpedicel brown grey dusted, yellow at base. Arista yellowish-brown; bare at apex. Palpus yellow, abruptly enlarged towards apex. Vibrissa absent. Thorax. Scutum dark brown, a little shiny; with a median presutural grey dusted vittae. Dorsocentrals 2+4, the first 2 postsutural pairs very short. Haltere yellow. Calypters white. Legs. Brownish-yellow. Fore tibia with a posterior median seta and 1 anteroventral to ventral. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal; without anteroventral and anterodorsal. Hind tibia without median setae; 1 dorsal preapical. Firest hind tarsomere enlarged and setulose. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. See diagnosis and notes in Pont (2019). It is closely related to *Lispe cana* (Walker, 1849), having a group of setulae on the meron below spiracle.

Lispe mirabilis (Stein, 1918)

Syntype. Female. India.

Remarks. The type was in good condition (see Pont and Werner 2006), but now unfortunately the only syntype female in ZMHU is surrounded by a white and transparent material, and the characters cannot be seen.

Lispe nana Macquart, 1835

Syntypes. 1 male, 1 female of *Lispe pulchella* Loew, 1847, junior synonym of *L. nana*. Turkey, Greece, Italy (including Sicily).

Diagnosis. Length of body. 4.0–4.5 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate shiny dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle narrow, brown, reaching lunule. Male fronto-orbital plate setulose. Antenna and arista brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa strong. Thorax. Scutum dark brown, a little shiny. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+2. Haltere yellow. Calypters white. Legs. Coxae and femora brown grey dusted, apex of femora yellow; tibiae yellow; tarsi yellowish-brown. Fore tibia without a posterior median seta; 1 anterodorsal and 1 posterodorsal preapical seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 anterodorsal and 1 posterodorsal setae, both median; without anteroventral; 1 short dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key by Hennig (1960) to Palaearctic *Lispe* and by Pont (1991) to the Arabian species of *Lispe*. The male and female terminalia were illustrated by Hennig (1960, text-figs 90, 124, 139, plate 19 fig. 383, plate 20 fig. 397). Hennig (1960) did not place this species in any group. Vikhrev (2014) established a *Lispe nana*-complex and gave a key to the constituent species.

Lispe nasoni Stein, 1898

Syntypes. 2 males, 2 females. U.S.A.

Diagnosis. Length of body. 5.5–6.5 mm (male, female). Head. Male dichoptic, frons very broad, more than one-third of head-width. Frons brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Face, parafacial and gena silver pruinose. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate with few setulae. Antenna brown; pedicel yellow at tip. Arista brown; bare on apical third. Palpus brown, gradually enlarged to apex. Vibrissa strong. Thorax. Scutum brown, grey dusted with 5 faint brown vittae. Dorsocentrals 2+4, the 2 first postsutural very short. Lower katepisternal strong, forming an equilateral triangle with the other two setae. Haltere yellow. Calypters white. Legs. Coxae and femora brown grey dusted; tibiae yellow; tarsi brown. Fore tibia with 1 anterodorsal and 1 posterodorsal setae, both median. Mid femur with 2 posterior preapical setae. Mid tibia with 1 submedian anterodorsal seta; without anteroventral and posterodorsal. Hind tibia with 1 median anterodorsal, 1 submedian anteroventral; without posterodorsal; a series of short anterodorsal setae on basal half; 1 dorsal preapical long. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The Nearctic species were revised by Snyder (1954), who also presented an identification key where this species can be identified. It belongs to the *uliginosa*-group of *Lispe*, with the characteristic median basal plate of sternite 5 (Hennig 1960, text-fig. 120). The male and female terminalia were illustrated by Snyder (1954, figs 6, 29, 37, 57, 70). It is also in the key to Nearctic species of the *uliginosa*-group by Vikhrev (2015), and more recently has been keyed, redescribed and illustrated by Fogaça and Carvalho (2018, figs 16a–f, syntype male and female habitus).

Lispe nicobarensis Schiner, 1868

Figs 109–112

Syntypes. 3 males, 4 females of *Lispa binotata* Becker, 1914, junior synonym of *L. nicobarensis*. Taiwan.

Diagnosis. Length of body. 3.5–4.0 mm (male), 6.0 mm (female). Head. Male dichoptic, frons broad, more than one-third

of head-width. Frons and fronto-orbital plate shiny dark brown, silver pollinose only close to lunule. Face, parafacial and gena yellowish silver pruinose. Ocellar triangle dark brown, reaching lunule. Male fronto-orbital plate with few setulae. Antenna and arista brown; arista bare on apical third. Palpus yellow, silver pruinose at tip; abruptly enlarged towards apex. Vibrissa absent. Thorax. Scutum uniformy shiny brown. Dorsocentrals 0+1. Haltere yellow. Calypters white. Legs. Coxae silver pruinose; trochanters yellow; femora, tibiae and tarsi brown; apex of femora and base of tibiae yellow. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia elongated, with 1 median anterodorsal; without anteroventral and posterodorsal setae; 1 dorsal preapical, very fine. Hind tibia of male with long and fine ventral setae on apical half. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Shiny brown, concolourous with scutum, with 2 rounded lateral silver pruinose spots close to anterior margin of tergite 4. Sternite 1 setulose.

Remarks. The species can be recognized by its shiny black general coloration and by the reduced setation of the scutum, with dorsocentrals 0+1 among other characters. Keyed and illustrated by Vikhrev (2015), who assigned the species to his *nicobarensis*-group. Recently Ge et al. (2018) proposed *Lispe leigongshana* Wei and Yang, 2007 as a junior synonym of this species and gave illustrations of the male and female habitus and the terminalia (Ge et al. 2018, figs 5 A–E, 6A–D, 7 A–E). In a more recent revision of the Australian species of *Lispe* by Pont (2019), the species was keyed and fully redescribed, and illustrations given of morphological characters and the male and female terminalia (Pont 2019, figs 98–107).

Lispe nivalis Wiedemann, 1830

Syntypes. 4 males, 3 females of *Lispa elephantina* Becker, 1903, a junior synomyn of *L. nivalis*. Egypt.

Diagnosis. Length of body. 5.0–6.0 mm (male), 5.5–6.5 mm (female). Head. Male dichoptic, frons more than one-third of head-width, dark brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Parafacial silver pruinose, brownish on upper half. Face and gena silver pruinose. Ocellar triangle almost indistinct. Male fronto-orbital plate setulose. Antenna and arista brown; bare on apical third. Palpus brown, abruptly enlarged towards apex. Vibrissa moderate. Thorax. Scutum brown, grey dusted; 1 brown median vitta and 2 broad dark brown lateral vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 1+4, the first 2 postsutural pairs very short. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown with a white grey dust, mainly on hind femur; fore tibia and tarsi brownish; mid and hind tibiae and tarsi yellowish. Fore coxa with a tuft of setae ventrally. Fore tibia without a posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 anterodorsal and 1 posterodorsal setae, both median; without anteroventral, without preapical dorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the keys by Hennig (1960) and by Pont (1991). The male and female terminalia were illustrated by Hennig (1960, text-figs 89, 137, plate 19 fig. 374, plate 20 fig. 398). Hennig (1960) did not group this species. More recently, Vikhrev (2014) keyed and illustrated the species and assigned it to his *nivalis*-group of *Lispe*.

Lispe niveimaculata Stein, 1906

Syntypes. 1 male, 1 female. Tanzania.

Diagnosis. Length of body. 7.0 mm (male, female). Head. Male dichoptic, frons broad, about one-third of head-width. Frons and fronto-orbital plate shiny dark brown, silver pollinose only close to lunule. Face, parafacial and gena brownish-yellow pruinose. Ocellar triangle indistinct. Male fronto-orbital plate with a few setulae. Antenna and arista brown, pedicel paler at apex; arista bare on apical third. Palpus yellow; abruptly enlarged towards apex. Vibrissa long. Thorax. Scutum brown, grey dusted; 1 brown median vitta and 2 broad dark brown lateral vittae. Dorsocentrals 0+1. Katepisternals 0+0+1. Haltere yellow. Calypters white. Legs. Coxae silver pruinose; trochanters yellow; femora, tibiae and tarsi yellowish-brown, whitish silver dusted. Fore femur with 2–3 differentiated ventral setae in apical third. Fore tibia with 1 submedian posterior seta. Mid femur with 1 posterior preapical seta. Mid tibia with 2 posterodorsal setae on middle third; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal setae; without preapical dorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the keys by Emden (1941) to Afrotropical *Lispe* and by Couri et al. (2006) to Madagascan species.

Lispe nubilipennis Loew, 1873

Holotype. Female. Russia.

Diagnosis. Length of body. 3.7 mm (female). Head. Frons broad, about one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper third, golden-silver pollinose on lower two-thirds. Face, parafacial and gena golden-silvery pruinose. Ocellar triangle almost indistinct. Antenna with pedicel yellow and postpedicel dark brown. Arista brown; bare on apical third. Palpus yellow, silver pruinose at tip; abruptly enlarged towards apex. Vibrissa long. Thorax. Scutum pale grey dusted, with 2 broad brown lateral vittae. Dorsocentrals broken. Katepisternals with only the posterior seta long. Haltere yellow. Calypters white. Legs. Coxae and femora grey pollinose, femora yellow at apex; trochanters yellow; tibiae and tarsi yellow. Fore tibia without a posterior median seta. Mid femur with 1 posterior preapical seta. Mid tibia with 1 median posterodorsal

seta; without anterodorsal and anteroventral. Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal, and 1 dorsal preapical seta. Arolium and pulvillus reduced. Wing. With some white and brown spots. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. Male unknown. The species can be identified with Hennig's (1960) key. It belongs in the *scalaris*-group of *Lispe* characterized, among other characters, by the palpus spoon-like at apex; acrostichal setulae in 2 rows; only posterior katepisternal long; spotted wing; fore tibia without median seta; mid tibia without anterodorsal seta and hind tibia without anteroventral and posterodorsal setae. The female habitus was illustrated by Vikhrev (2012a). Vikhrev (2014) gave an identification key for species of the *scalaris*-group of *Lispe*.

Lispe odessae Becker, 1904

Figs 89–92

Holotype. Male. Ukraine.

Diagnosis. Length of body. 4.5–6.0 mm (male), 6.0–7.0 mm (female). Head. Male dichoptic, frons about one-third of head-width. Frons, fronto-orbital plate, face, parafacial and gena golden pruinose. Ocellar triangle broad, golden pruinose, with convex margins and reaching lunule. Fronto-orbital plate and parafacial with few setulae. Antenna and arista dark brown; bare on apical third. Palpus dark brown, abruptly dilated in apical part. Vibrissa short. Thorax. Scutum dark brown, with 2 lateral grey dusted areas close to suture and before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Lower katepisternal seta strong, forming an equilateral triangle with the other two setae. Haltere yellow. Calypters white. Legs. Brown, grey dusted; femoro-tibial joints yellow. Fore tibia with 1 posterior median seta; 1 dorsal preapical. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior seta; 1 submedian anterodorsal; without anteroventral seta. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; 1 long dorsal in apical fourth; 1 preapical anterodorsal. Hind tarsomere 1 enlarged and setulose. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. A very distinctive species, belonging to the *caesia*-group of *Lispe* (Hennig 1960). It can be identified with the key by Hennig (1960) to Palaearctic *Lispe*. It is very similar to *Lispe caesia* Meigen, 1826 and the characters distinguishing the two species have been given in a key by Vikhrev et al. (2016) who also illustrate the male terminalia (Vikhrev et al. 2016, figs 8–9).

Lispe orientalis Wiedemann, 1824

Syntypes. 2 males, 4 females of *Lispa opaca* Becker, 1914, junior synonym of *L. orientalis*. Taiwan.

Diagnosis. Length of body. 6.5–7.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper third, golden-silver pollinose on lower two-thirds. Face, parafacial and gena golden-silvery pruinose, more golden in female. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate setulose. Antenna dark brown, apex of pedicel yellow. Arista brown; bare on apical third. Palpus yellow, silver pruinose at tip; abruptly enlarged towards apex. Vibrissa long. Thorax. Scutum grey dusted, with 5 brown fine vittae, the two along the dorsocentral rows of setae reaching the subbasal pair of scutellar setae. Dorsocentrals 1+4, only the posterior pair long. Haltere yellow. Calypters white. Legs. Mostly brown, white grey pollinose; tip of femora yellow; tarsi brown on dorsal surface, yellow on posterior margin of each tarsomere and yellow on ventral surface. Fore tibia without posterior median seta. Mid femur with 1 posterior preapical seta; male mid and hind femora with fine setae on anteroventral and posteroventral surfaces (Chew et al. 2012, fig. 1f). Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 anterodorsal and 1 posterodorsal setae, both median; without anteroventral; 1 short dorsal preapical. Arolium and pulvillus a little enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. Easily identified with the key by Vikhrev (2011a) to the Palaearctic species of the *tentaculata*-group (see comments on this group under *L. consanguinea*). Hennig (1960, text-figs 113, 128, 157, plate 19 fig. 372, plate 20 fig. 391) illustrated the male and female terminalia, and the male terminalia were also illustrated by Vikhrev (2011a, figs 3.3–4, 5.2). Recently recorded from Malaysia by Chew et al. (2012).

Lispe palposa (Walker, 1849)

Syntypes. 1 male, 5 females of *Lispa nigromaculata* Stein, 1898, junior synonym of *L. palposa*. U.S.A.

Diagnosis. Length of body. 5.0 mm (male), 6.0–6.5 mm (female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons and fronto-orbital plate dark brown. Face, parafacial and gena silver pruinose. Ocellar triangle almost indistinct. Male fronto-orbital plate with few setulae. Antenna and arista brown; bare on apical third. Palpus brown; abruptly enlarged towards apex. Vibrissa absent. Thorax. Scutum dark brown, a little shiny, with 2 grey dusted lateral areas close to suture and a transverse band before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown, grey dusted, tip of femora yellow. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 anterodorsal and 1 posterodorsal setae, both median; without anteroventral. Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The Nearctic species were revised by Snyder (1954), who also gave an identification key with which this species can be identified. It belongs to the *palposa*-group of *Lispe*

(Hennig 1960) (see comments on the group under *L. elkantarae*). The male and female terminalia were illustrated by Snyder (1954, figs 31, 49, 63, 75).

Lispe parcespinosa Becker, 1900

Syntype. Male. Russia. Syntypes. 1 male 1 female of *Lispa bohemica* Becker, 1904, ranked as a subspecies of *Lispe parcespinosa* by Vikhrev (2015). Poland.

Diagnosis. Length of body. 5.0 mm (male), 6.0–7.0 mm (female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons yellowish-brown; yellow close to lunule. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle golden pruinose, reaching lunule. Fronto-orbital plate and parafacial setulose. Antenna dark brown. Arista short, dark brown; bare on apical third. Palpus yellow, abruptly enlarged towards apex; apex very large. Vibrissa very short and fine. Thorax. Scutum brown, grey pollinose. Postpronotum and notopleuron light grey dusted. Dorsocentrals 2+3. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal and 1 anterodorsal setae; without anteroventral. Mid tarsomere 4 with 1 enlarged rod-like apical seta (Vikhrev 2015, fig. 15). Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus very reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species is placed by Vikhrev (2015) in the *palposa* group of *Lispe* and it can be identified by the key in the same paper. Hennig (1960) did not consider *L. parcespinosa* to be distinct from *L. frigida* Erichson in Ménétriés, 1851, and so in his key to Palaearctic *Lispe* it will run to *L. frigida*. Both species can be recognised by the rod-like apical seta on mid tarsomere 4 (Vikhrev 2015, fig. 15).

Lispe patellitarsis Becker, 1914

Figs 113–116

Syntype. Male. Taiwan.

Diagnosis. Length of body. 4.8 mm (male). Head. Male dichoptic, frons one-fourth of head-width. Frons brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle dark brown, reaching lunule. Fronto-orbital plate with 1 row of setulae. Antenna and arista brown; bare on apical third. Palpus brown, silver pruinose at tip; abruptly enlarged towards apex. Vibrissa absent. Thorax. Scutum dark brown, a little shiny, with 2 grey dusted lateral areas close to suture and a transverse band before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 0+1. Haltere yellow. Calypters white. Legs. Coxae, femora and tibiae grey dusted, tip of femora yellow; trocanters yellow; tarsi yellow. Fore tarsomere of hind leg very enlarged and flattened. Fore tibia with 1 short submedian posterior to posterodorsal seta. Mid femur with 1 very fine posterior preapical seta. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 anterodorsal and 1 submedian anteroventral setae; without posterodorsal and dorsal preapical. Hind tibia of male with long and fine ventral setae on apical half. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Lispe pectinipes Becker, 1903

Syntype. 1 female of *Lispa cochlearia* Becker, 1904, junior synonym of *L. pectinipes*. Canary Islands. Holotype. Female of *Lispa lateralis* Stein, 1906, junior synonym of *L. pectinipes*. Mozambique.

Diagnosis. Length of body. 5.0 mm (female). Head. Frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and golden pruinose on lower half. Parafacial golden pruinose. Gena partially golden and silver pruinose. Ocellar triangle brown, reaching lunule. Antenna brown; apex of pedicel yellow. Arista brown, bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa moderate. Thorax. Scutum brown, grey dusted; 3 brown vittae, the median one reaching apex of scutellum. Dorsocentrals 1+4, the first 2 postsutural pairs very short. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown, grey dusted, yellow at apex; tibiae yellow, tarsi brownish. Fore tibia with 1 posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 preapical dorsal. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species is very similar to *Lispe leucospila* (Wiedemann, 1830), both of which can be recognised by the presence of a single strong presutural dorsocentral seta (Hennig 1960). They can be separated by the key in Vikhrev (2011b).

Lispe pumila (Wiedemann, 1824)

Syntypes. 9 males, 7 females of *Lispa proletaria* Becker, 1914, junior synonym of *L. pumila*. Taiwan.

Diagnosis. Length of body. 4.5–5.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate golden pruinose. Parafacial, face and gena silver pruinose. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate setulose. Antenna brown, apex of pedicel yellow. Arista brown; bare on apical third. Palpus yellow, gradually enlarged towards apex. Vibrissa long. Thorax. Scutum brown, grey dusted; 3 faint brown median vittae, the median one reaching scutellar disc. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4, only the posterior 2 pairs long. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown, grey dusted, yellow at apex; tibiae yellow and tarsi brownish. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 anterodorsal and 1 posterodorsal setae,

both median; without anteroventral. Hind tibia with 1 median anterodorsal and 1 submedian anteroventral setae; without posterodorsal; 1 preapical dorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified with the keys by Vikhrev (2012a, 2016). The habitus was illustrated by Vikhrev (2012a, fig. 7). It belongs to the *pumila*-group of *Lispe* (see comments on the group under *Lispe angustipalpis*). It was also keyed by Xue and Zhang (2005), but their couplet 32 states that fore tibia has 1 long posteroventral. In a more recent revision of the Australian species of *Lispe* by Pont (2019), the species was keyed and fully redescribed, and some morphological characters and the male and female terminalia were illustrated (Pont 2019, figs 460–471).

Lispe pygmaea Fallén, 1825b

Syntypes. 6 males, 3 females of *Lispe simplicissima* Loew, 1847, junior synonym of *L. pygmaea*. Italy (Sicily).

Diagnosis. Length of body. 5.0–6.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate, parafacial, face and gena silver-golden pruinose. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate setulose. Antenna brown, apex of pedicel yellow. Arista brown; bare on apical third. Palpus yellow, gradually enlarged towards apex. Vibrissa long. Thorax. Scutum brown, grey dusted; 3 very faint brown vittae. Dorsocentrals 2+3, all long. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown, grey dusted, yellow at apex; tibiae and tarsi yellow. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 anterodorsal seta; without anteroventral and posterodorsal; 1 preapical dorsal. Arolium and pulvillus short. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be easily identified in the keys by Hennig (1960), Pont (1991) and Vikhrev (2012a, 2016). The male and female terminalia were illustrated by Hennig (1960, text-figs 91, 122, 127, plate 19 fig. 389, plate 20 fig. 392). Hennig (1960) did not group this species. The species was assigned to the *pumila* group by Vikhrev (2012a), but was later transferred to the *pygmaea* species-complex (Vikhrev 2016), characterized by dorsocentrals 2+3, all strong; mid tibia with 1 posterior seta; hind tibia with only 1 anterodorsal seta; lower parafacial without strong seta; and pulvillus short. In a more recent revision of the Australian species of *Lispe* by Pont (2019), notes and illustrations of male and female terminalia were given (figs 2–8).

Lispe rigida Becker, 1903

Syntypes. 2 males, 5 females. Egypt.

Diagnosis. Length of body. 4.5–5.5 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate golden brownish pruinose. Face, parafacial and gena silver pruinose. Ocellar triangle broad, golden brownish pruinose, reaching lunule. Fronto-orbital plate setulose. Antenna brown, apex of pedicel yellow. Arista brown; bare on apical third. Palpus yellow; abruptly enlarged towards apex. Vibrissa long. Thorax. Scutum dark brown, a little shiny, with 2 grey dusted lateral areas close to suture and a transverse band before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Mostly brown, posterior surface of coxae and ventral surfaces of fore and mid tarsi yellow. Fore tibia without a posterior median seta. Mid femur with 1 long posterior preapical seta. Mid tibia with 1 anterodorsal and 1 posterodorsal setae, both median; without anteroventral. Hind tibia with 1 median anterodorsal seta; without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 with very few setulae.

Remarks. It can be identified in the keys by Hennig (1960) to the Palaearctic species of *Lispe* and by Pont (1991) to the Arabian species.

Lispe salina Aldrich, 1913

Syntypes. 1 male, 1 female. U.S.A.

Diagnosis. Length of body. 7.0 mm (male), 7.3 mm (female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Face golden pruinose. Parafacial and gena silver pruinose. Ocellar triangle brown, reaching lunule. Male fronto-orbital plate and parafacial setulose. Antenna and arista dark brown, bare on apical third. Palpus yellow, abruptly enlarged towards apex which is very large. Vibrissa moderate. Thorax. Scutum dark brown, a little shiny, with 2 grey dusted lateral areas close to suture and a transverse band before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3, all long. Haltere with the knob brown. Calypters white. Legs. Mostly brown, posterior surface of coxae and ventral surfaces of fore and mid tarsi yellow. Fore tibia without a posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 posterodorsal and 1 anterodorsal setae, both median; without anteroventral. Male hind femur with a posteroventral row of many brownish-yellow setae on basal half. Hind tibia with 1 median anterodorsal; without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus very reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose. Male sternite 5 with many long hairs on posterior margin (Snyder 1954, fig. 52). Female with a transverse shiny yellow band on base of tergites 4 and 5.

Remarks. It can be identified with the key by Snyder (1954) to the Nearctic species. The male and female terminalia were illustrated by Snyder (1954, figs 33, 52, 64, 76). It belongs to the *palposa*-group of *Lispe* (Hennig 1960, Snyder 1954) (see comments on this group under *L. elkantarae*).

Lispe scalaris Loew, 1847

Holotype. Female. Turkey. Syntypes. 1 male, 2 females of *Lispa persica* Becker, 1904, junior synonym of *L. scalaris*. Iran.

Diagnosis. Length of body. 3.0–4.0 mm (male, female). Head. Male dichoptic, frons broad, about one-third of head-width. Frons dark brown. Fronto-orbital plate silver pruinose, with a shining black spot close to the ocelli. Parafacial and face golden pruinose. Gena silver pruinose. Ocellar triangle broad, brown, upper half shiny, reaching oral margin. Male fronto-orbital plate with few setulae. Antenna brown, apex of pedicel yellow. Arista brown, bare on apical half. Palpus yellow, abruptly enlarged towards apex. Vibrissa long. Thorax. Scutum brown, grey dusted, 2 broad shiny dark brown lateral vittae. Scutellum shiny dark brown on posterior half. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3, all long. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown, grey dusted, yellow at apex; tibiae yellow and tarsi brownish-yellow. Fore tibia without a posterior median seta. Mid femur with 1 short posterior preapical seta. Mid tibia with 1 median short posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 short median anterodorsal; without anteroventral and posterodorsal; 1 short preapical dorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key to the Palaearctic species of *Lispe* by Hennig (1960), who illustrated the male terminalia (1960, figs 138, 158, plate 19 fig. 380, plate 20 fig. 395). It belongs to the *scalaris*-group of *Lispe* (Hennig 1960). See comments on this group under *Lispe nubilipennis*. A long series of males and females in the ZMHU collection.

Lispe sericipalpis Stein, 1904

Holotype. Female of *Lispa trilineata* Stein, 1906, a junior synonym of *L. sericipalpis*. Sri Lanka.

Diagnosis. Length of body. 3.0–4.0 mm (female). Head. Frons broad, about one-third of head-width. Frons dark brown. Fronto-orbital plate brown on upper half and golden pruinose on lower half. Parafacial, face and gena silver pruinose. Fronto-orbital plate setulose. Antenna and arista dark brown. Palpus brown, a little grey dusted at tip, abruptly enlarging to apex. Vibrissa moderate. Thorax. Scutum brown, grey dusted, with 5 brown vittae. Dorsocentrals 2+4, only the 2 posterior ones long. Haltere yellow. Calypters white. Legs. Brown, grey dusted. Fore tibia without posterior seta. Mid femur with 1 short posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 median anterodorsal seta; without anteroventral and posterodorsal setae; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. This species can be identified with the key by Vikhrev (2011a) to the Palaearctic species of the *tentaculata*-group (see comments on this group under *L. consanguinea*). Vikhrev (2011a, figs 3.1–2, 4, 5.1, as *L. sericipalpis*) illustrated the male terminalia. A long series of males and females in the ZMHU collection.

Lispe setuligera Stein, 1911

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 484). Chile.

Diagnosis. Length of body. 5.3 mm (male). Head. Male frons broad, about one-third of head-width. Frons dark brown. Fronto-orbital plate brown on upper half and golden pruinose on lower half. Parafacial, face and gena golden and silver pruinose. Fronto-orbital plate setulose. Antenna dark brown, apex of pedicel yellow. Arista dark brown, bare on apical third. Palpus yellow, abruptly enlarged towards apex. Vibrissa absent. Thorax. Scutum brown, grey dusted, with 5 brown vittae, the median one reaching apex of scutellum. Dorsocentrals 2+3, all long. Haltere yellow. Calypters white. Legs. Coxae grey dusted; trochanters yellow; femora brown, grey dusted, yellow at apex; tibiae yellow and tarsi brownish-yellow. Fore tibia with 2 fine posterior setae on apical third. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind legs broken. Arolium and pulvillus not enlarged. Wing. Costal spine distinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key by Vikhrev (2016). The male hypopygium was illustrated by Vikhrev (2016, fig. 25). It was placed in the *pygmaea* species-complex by Vikhrev (2016) (see the comments on this group under *L. pygmaea*). Fogaça and Carvalho (2018) recently keyed and redescribed the species and illustrated the male and female terminalia (figs 6e, 7e, 8e, 9c–h, 10d, 11g–i).

Lispe simonyi Becker, 1910

Syntypes. 1 male, 1 female. Yemen (Socotra Island).

Diagnosis. Length of body. 5.3 mm (male, female). Head. Male frons broad, about one-third of head-width. Frons dark brown on upper half and silver pollinose on lower half. Fronto-orbital plate, face, parafacial and gena silver pruinose. Fronto-orbital plate setulose. Ocellar triangle silver pruinose, reaching lunule. Antenna very short, brown, apex of pedicel yellow. Arista dark brown, bare on apical third. Palpus yellow, silver pruinose, abruptly enlarged towards apex. Vibrissa short. Thorax. Scutum dark brown, pale grey dusted, with 2 faint brown vittae. Dorsocentrals 2+4, only the last 2 pairs long. Haltere yellow. Calypters white. Legs. Coxae, femora and tibia brown grey dusted, femoro-tibial joints yellow; tarsi brown. Fore tibia with 1 posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral. Hind tibia with 1 anterodorsal and 1 anteroventral setae; without posterodorsal; 1 long preapical dorsal. Arolium and pulvillus not enlarged. Wing.

Costal spine indistinct. M straight at apex. Abdomen. Sternite 1 setulose. Abdomen uniformly pale grey dusted in male and with 2 brown vittae on tergite 4 in female.

Remarks. The species runs to *Lispe ambigua surda* Curran, 1937 in the key by Emden (1941). See note in Emden (1941).

Lispe superciliosa Loew, 1861

Syntype. Male. Austria.

Diagnosis. Length of body. 6.0 mm (male). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate with very little grey dust and with 2 velvety dark brown areas close to the insertion of antenna. Face, parafacial and gena silver pruinose. Ocellar triangle golden pruinose, not reaching lunule. Fronto-orbital plate setulose. Antenna and arista dark brown; bare on apical third. Palpus brown, abruptly enlarged towards apex; apex very large. Vibrissa moderate. Thorax. Scutum dark brown, a little shiny, with 2 grey dusted lateral areas close to suture and a transverse band before scutellum. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3, all long. Haltere brown. Calypters white, with margins yellow. Legs. Brown, grey dusted. Fore tibia with 1 short posterior median seta. Mid femur with 2 posterior preapical setae. Mid tibia with 3–5 long anterodorsal setae on apical half; 1 median posterior to posterodorsal; without anteroventral. Hind tibia with an anterodorsal and posterodorsal series of fine setae in male and 1 median anterodorsal in female; without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus short. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified by the chaetotaxy of mid tibia, and also with the key by Hennig (1960) to the Palaearctic species of *Lispe*. It belongs to the *palposa*-group of *Lispe* (Hennig 1960) (see comments on the group under *L. elkantarae*). The male and female terminalia were illustrated by Hennig (1960, text-figs 83, 132, plate 19 fig. 375, plate 20 fig. 394). It was also keyed and illustrated by Vikhrev (2015). A large serie of males and females in the ZMHU collection.

Lispe tentaculata (De Geer, 1776)

Syntypes. 7 males, 9 females of *Lispa canariensis* Becker, 1904, junior synonym of *L. tentaculata*. Canary Islands.

Diagnosis. Length of body. 6.0–7.0 mm (male, female). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle brown, straight and reaching lunule. Fronto-orbital plate setulose. Antenna and arista dark brown; bare on apical third. Palpus dark brown, abruptly enlarged towards apex; apex very large. Vibrissa long. Thorax. Scutum brown, with 3 dark brown vittae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+3, all long. Haltere yellow. Calypters white. Legs. Mostly brown; femoro-tibial joints yellow; tarsi yellow on ventral surface; fore tarsomere 1 with a dorsal finger-like projection. Fore tibia without a posterior median seta. Mid femur with 1 short posterior preapical seta. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind femur with fine and long anteroventral setae on apical half. Hind tibia with 1 median anterodorsal, without anteroventral and posterodorsal; 1 dorsal preapical. Arolium and pulvillus reduced. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. It can be identified with the key to Palaearctic *Lispe* by Hennig (1960), who also illustrated the male and female terminalia (Hennig 1960, text-figs 111, 131, 160, plate 18 fig. 369, plate 19 fig. 370, plate 20 fig. 407). It belongs to the *tentaculata*-group of *Lispe* (Hennig 1960) (see comments on the group under *L. consanguinea*). It can also be identified with the key by Vikhrev (2011a) to the Palaearctic species of the *tentaculata*-group, with an illustration of the cercal plate (Vikhrev 2011a, fig. 2.1). Vikhrev (2014) also keyed and illustrated the species, and more recently Fogaça and Carvalho (2018, figs 1e, 3f, 5j, 6f, 7f, 8f) have keyed, redescribed and illustrated the species. In a more recent revision of the Australian species of *Lispe* by Pont (2019, figs 9–15), notes and illustrations of male and female terminalia were provided. A long series of males and females in the ZMHU collection.

Lispe tuberculitarsis Stein, 1913

Syntype. Male. South Africa.

Diagnosis. Length of body. 6.0 mm (male). Head. Male dichoptic, frons broad, more than one-third of head-width. Frons and fronto-orbital plate shiny dark brown. Parafacial, face and gena silver pruinose. Ocellar triangle almost indistinct. Fronto-orbital plate setulose. Antenna and arista dark brown; bare on apical third. Palpus dark brown, abruptly enlarged towards apex, without dust. Vibrissa long. Thorax. Scutum almost uniformly shiny dark brown, with 2 small grey dusted lateral areas before scutellum. Postpronotum and notopleuron grey pollinose. Dorsocentrals 1+2. Haltere yellow. Calypters white. Legs. Coxae and femora brown, grey pollinose, apex of femora yellow; fore tibia yellow at base and apex, grey pollinose on middle third; mid and hind tibiae yellow; fore tarsus partly yellow; mid and hind tarsus yellow. Fore tibia with 1 anterodorsal and 1 posterodorsal setae. Fore tarsomere 2 with a small ventral tubercle. Mid femur with 2 posterior preapical setae. Mid tibia with 1 median posterior to posterodorsal seta; without anterodorsal and anteroventral setae. Hind tibia with 1 median anterodorsal, 1 submedian anteroventral and 1 median posterodorsal; 1 dorsal preapical. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Vein M straight. Abdomen. Sternite 1 setulose.

Remarks. The species can be identified in the key by Emden (1941).

Lispoides abnorminervis (Stein, 1911)

Paralectotype. Male. Lectotype in SMT, designated by Pont (2001: 462). Bolivia.

Diagnosis. Length of body. 6.5 mm (male). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate, parafacial, face and gena silver pruinose. Ocellar triangle brownish, short, not reaching halfway to lunule. Fronto-orbital plate with few setulae, close to antennal insertion. Eye bare. Antenna dark brown; pedicel with a few setae, 2 of them longer. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Many genal and postgenal setae, as long as vibrissa, some of them curved upwards. Thorax. Scutum dark brown with a little grey dust, with 5 dark brown vittae. With many fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere brownish. Calypters yellowish-white, margins brown. Legs. Brown. Fore femur and tibia with fine and long anterodorsal, dorsal and posterodorsal rows of setae, some with curled tips, especially on apical half of fore femur. Mid tibia with 2 posterior to posterodorsal setae. Arolium and pulvillus enlarged. Wing. Smoky brown, darker near base, along the veins and with a darker spot around cross-vein r-m. Costal spine short. Abdomen. Dark brown, with lateral transverse grey white dusted spots close to the anterior margins of tergites 3–5. Sternite 1 setulose. Tergite 5 with many long and fine setae.

Remarks. Among its congeners the species is easily recognized by the colour-pattern of the wing and the grey white dusted spots on the abdomen. The species can be identified with the key by Stein (1911, as *Limnophora abnorminervis*).

Lispoides aequifrons (Stein, 1898)

Figs 117–120; 242–244

Syntypes. 1 male, 2 females. U.S.A.

Diagnosis. Length of body. 7.0–7.5 mm (male, female). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate, parafacial, face and gena silver pruinose. Ocellar triangle brownish, very short. Fronto-orbital plate with setulae, close to antennal insertion, continuing below as far as middle of parafacial. Eye bare. Antenna dark brown; pedicel with a few setae, 2 of them longer. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Some genal and postgenal setae, as long as vibrissa, some of them curved upwards. Thorax. Scutum brown, grey dusted, with 3 brown vittae; with many fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Brown, trochanters and femoro-tibial joints yellow. Fore femur and tibia with fine and long anterodorsal, dorsal and posterodorsal rows of setae, some with curled tips, especially on apical half of fore femur. Fore tibia with 1 stronger posterior to posterodorsal seta. Mid tibia in male without median setae; in female with 2–3 anterodorsal and posterodorsal setae. Arolium and pulvillus enlarged. Wing. Clear. Costal spine short. Abdomen. Brown, grey pollinose, with a median brown vitta on tergites 3–5 and lateral triangular brown spots on tergites 3 and 4. Sternite 1 setulose. Tergite 5 with many long and fine setae.

Remarks. The species is similar to *L. abnorminervis* but can be easily separated by the colour-pattern of the wing and the spots on the abdomen. Keyed by Malloch (1934) in a partial key to *Lispoides* species. Male aedeagus as in Fig. 242 and female ovipositor as in Figs 243–244.

Lispoides atrisquama (Stein, 1904)

Syntype. Female. Peru.

Diagnosis. Length of body. 7.0 mm (female). Head. Frons about one-third of head-width. Frons dark brown. Fronto-orbital plate brown on upper half and silver pruinose on lower half. Parafacial, face and gena silver pruinose. Ocellar triangle brownish, almost reaching halfway to lunule. Fronto-orbital plate with few setulae, close to antennal insertion. Eye bare. Antenna dark brown; pedicel with 2 moderate setae and a few other short setae. Arista dark brown, very short pubescent, enlarged at base. Palpus dark brown, with many setae. Vibrissa long. Many genal and postgenal setae, as long as vibrissa, some of them curved upwards. Thorax. Scutum dark brown, with 3 faint dark brown vittae, more visible presuturally; with many fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere brownish. Calypters yellowish-white, margins brown. Legs. Dark brown. Fore femur with fine and long anterodorsal, dorsal and posterodorsal rows of setae. Fore tibia with 1 posterior to posterodorsal seta. Mid femur with strong setae on posteroventral surface. Mid tibia with 3 posterodorsal and 2 anterodorsal setae. Hind femur with strong ventral setae close to apex. Arolium and pulvillus enlarged. Wing. Uniformly smoky brown. Costal spine indistinct. Abdomen. Brown, grey pollinose, with a median brown vitta on tergites 3–5 and lateral brown triangular spots on tergites 1+2–5. Sternite 1 setulose.

Remarks. The species can be recognized by the chaetotaxy of mid and hind femora. It can be identified with the key by Stein (1911, as *Limnophora atrisquama*).

Lispoides diluta (Stein, 1911)

Lectotype. Male. Paralectotype. 1 female. Lectotype designated by Pont (2001: 469). Chile.

Diagnosis. Length of body. 5.8 mm (male), 6.0 mm (female). Head. Male dichoptic, less than one-third of head-width. Frons straight, dark brown. Fronto-orbital plate broad, silver pruinose, bare. Parafacial, face and gena silver pruinose. Ocellar triangle silver pruinose, almost reaching halfway to lunule. Eye bare. Antenna dark brown; pedicel with 2 moderate setae and a few other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Thorax. Scutum grey pale dusted, with 3 faint brown vittae; with few ground-setulae. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Brown, grey dusted, trochanters and femoro-tibial joints yellow; tarsi brownish, yellow on ventral surface. Fore femur and tibia without fine and long anterodorsal, dorsal and posterodorsal rows of setae. Fore tibia with 1 median posterior

seta. Mid tibia with 2 posterodorsal setae. Arolium and pulvillus not enlarged. Wing. Clear. Costal spine indistinct. Abdomen. Brown, grey pollinose, with a faint median brown vitta on tergites 3–5 and lateral brown rounded spots on tergites 3 and 4. Sternite 1 setulose.

Remarks. The species can be identified in the key by Stein (1911, as *Limnophora diluta*).

Lispoides gracilis (Stein, 1911)

Paralectotypes. 1 male, 1female. Lectotype in SMT, designated by Pont (2001: 471). Chile.

Diagnosis. Length of body. 7.8 mm (male), 7.2 mm (female). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate, parafacial, face and gena silver pruinose. Ocellar triangle almost indistinct. Fronto-orbital plate with setulae, close to antennal insertion. Eye bare. Antenna dark brown; pedicel with 2 strong setae and some other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Some genal and postgenal setae, not as long as vibrissa, some of them curved upwards. Thorax. Scutum almost uniformly dark brown; with many fine and quite long ground-setulae in addition to the usual setae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Dark brown, trochanters and femoro-tibial joints yellow. Fore femur with a posterior row of strong setae, differentiated from the many fine setae on the other surfaces. Fore tibia with 1 posterior to posterodorsal seta. Mid tibia with 2 posterior setae. Arolium and pulvillus not enlarged. Wing. Clear. Costal spine very short, but distinct. Abdomen. Mostly brown, grey pollinose in small lateral areas on each tergite. Sternite 1 setulose. Tergite 5 with many long and fine setae.

Remarks. The species can be identified with the key by Stein (1911, as *Limnophora gracilis*).

Lispoides laevis (Stein, 1911)

Paralectotype. Female. Lectotype in SMT, designated by Pont (2001: 475). Peru.

Diagnosis. Length of body. 6.5 mm (female). Head. Frons a little narrower, about one fourth of head-width. Frons reddish brown. Fronto-orbital plate and parafacial silver pruinose. Face grey dusted. Gena reddish brown. Ocellar triangle indistinct. Fronto-orbital plate with very few setulae, close to antennal insertion. Eye bare. Antenna dark brown; pedicel with 2 moderate setae and a few other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with some setae. Vibrissa long. Few genal and postgenal setae, not as long as vibrissa, some of them curved upwards. Thorax. Scutum brown, with 2 grey dusted vittae presuturally and 2 grey dusted lateral areas before scutellar suture; with very few ground-setulae. Postpronotum and notopleuron grey dusted. Dorsocentrals 2+4. Haltere yellow. Calypters yellowish-white, upper one with a narrow brown margin and lower one with a broader brown margin. Legs. Dark brown. Fore tibia with 1 posterior to posterodorsal seta. Mid tibia with 1 posterior seta. Hind legs broken. Arolium and pulvillus not enlarged. Wing. Clear. Costal spine indistinct. Abdomen. Broken.

Remarks. It can be identified with the key by Stein (1911, as *Limnophora laevis*).

Lispoides nigribasis (Stein, 1911)

Figs 121–124

Lectotype. Male. Paralectotype. Male. Lectotype designated by Pont (2001: 477). Peru.

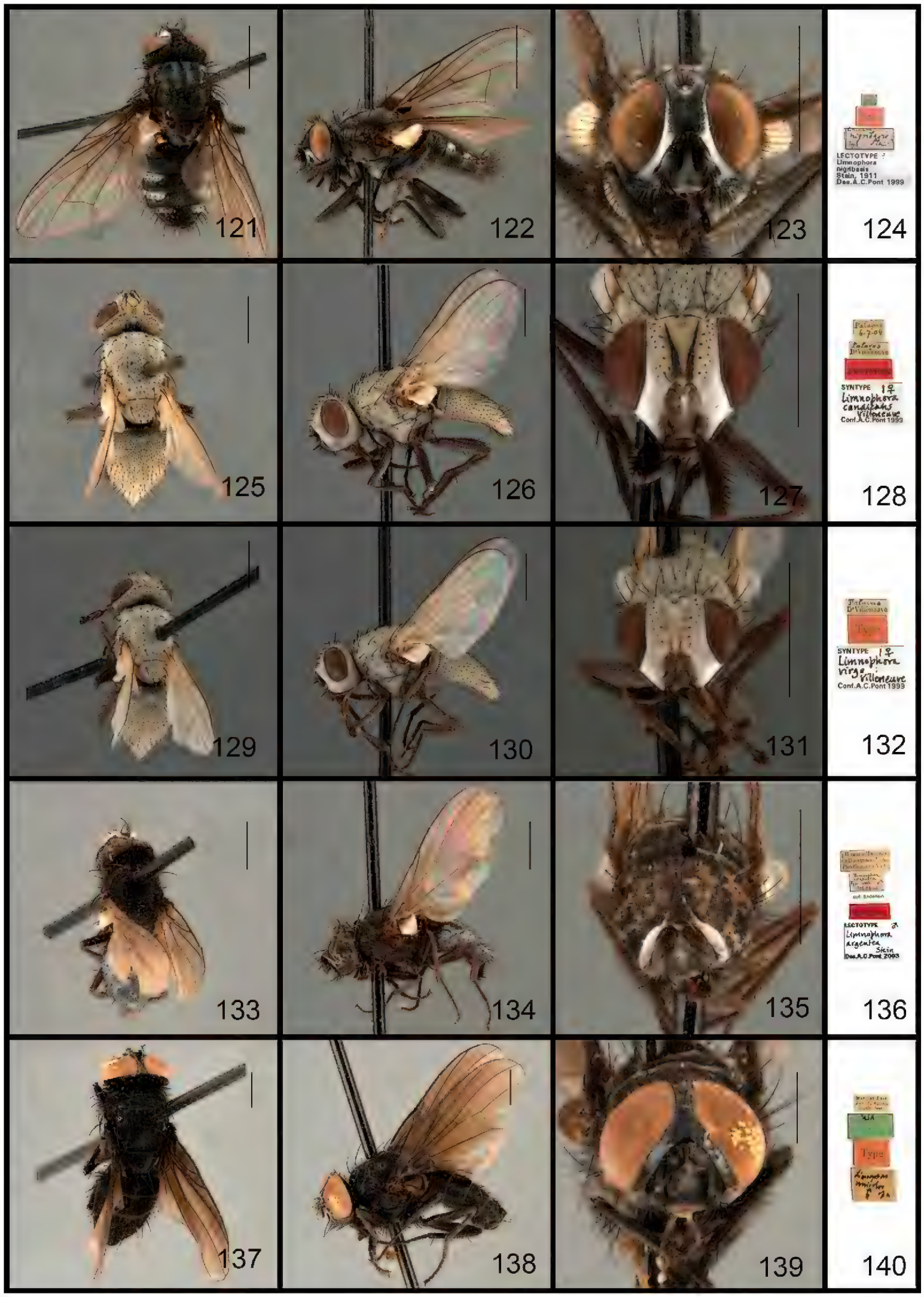
Diagnosis. Length of body. 6.5 mm (male). Head. Male dichoptic, frons about one-third of head-width. Frons dark brown. Fronto-orbital plate, parafacial and face silver pruinose. Gena mostly dark brown. Ocellar triangle with very little grey dust, short, not reaching halfway to lunule. Fronto-orbital plate with few setulae, close to antennal insertion. Eye bare or with very few hairs. Antenna dark brown; pedicel with 2 moderate setae and some other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Some genal and postgenal setae, not as long as vibrissa, some of them curved upwards. Thorax. Scutum dark brown, grey dusted, with 5 dark brown vittae; with a few fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Brown, trochanters yellow. Fore tibia without median setae. Mid tibia with 1 posterior, 1 anterodorsal and 1 posterodorsal, all submedian. Arolium and pulvillus enlarged. Wing. Smoky brown, darker at base. Costal spine indistinct. Abdomen. Dark brown, with lateral transverse grey white dusted spots close to the anterior margins of tergites 3–5. Sternite 1 setulose. Tergite 5 with many long and fine setae.

Remarks. The species can be identified with the key by Stein (1911, as *Limnophora nigribasis*).

Lispoides pubiceps (Stein, 1911)

Paralectotype. Female. Lectotype in SMT, designated by Pont (2001: 482). Peru.

Diagnosis. Length of body. 6.5 mm (female). Head. Frons broad, more than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and siver pollinose on lower half. Parafacial, face and gena silver pruinose. Ocellar triangle grey dusted, reaching halfway to lunule. Fronto-orbital plate along its entire length with several setulae, some of them quite long. Eye with many hairs. Antenna dark brown; pedicel with 2 long setae and some other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with many setae. Vibrissa long. Some genal and postgenal setae, not as long as vibrissa, some of them curved upwards. Thorax. Scutum dark brown, grey dusted, with 5 dark brown vittae; with some fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere brownish. Calypters white. Legs.



Figures 121–140. *Lispoides nigribasis*, lectotype male: (117) dorsal habitus; (118) lateral habitus; (119) head in frontal view; (120) labels; *Neolimnophora maritima*, syntype female of *Limnophora candicans*: (125) dorsal habitus; (126) lateral habitus; (127) head in frontal view; (128) labels; *Neolimnophora virgo*, syntype female: (129) dorsal habitus; (130) lateral habitus; (131) head in frontal view; (132) labels; *Spilogona argentea*, lectotype male: (133) dorsal habitus; (134) lateral habitus; (135) head in frontal view; (136) labels; *Spilogona concolor*, syntype male: (137) dorsal habitus; (138) lateral habitus; (139) head in frontal view; (140) labels. Scale bars: 1.0 mm.

Brown. Fore tibia with 1 median posterior seta. Mid tibia with 3 posterior, 2 anterodorsal and 1 anteroventral setae. Arolium and pulvillus not enlarged. Wing. Clear. Costal spine very short, but distinct. Abdomen. Brown, grey dusted, with a median dark brown vitta and dark brown triangular spots on tergites 1+2–4. Sternite 1 setulose.

Remarks. It can be separated from its congeners by the haired eyes, and can also be identified with the key by Stein (1911, as *Limnophora pubiceps*).

Lispoides triplex (Stein, 1911)

Fig. 245

Paralectotypes. 2 males, 3 females. Lectotype in SMT, designated by Pont (2001: 486). Chile.

Diagnosis. Length of body. 6.0 mm (male, female). Head. Male dichoptic, frons less than one-third of head-width. Frons dark brown. Fronto-orbital plate dark brown on upper half and silver pruinose on lower half. Parafacial, and face silver pruinose. Gena mostly dark brown. Ocellar triangle with very little grey dust, short, not reaching halfway to lunule. Fronto-orbital plate with few setulae, close to antennal insertion. Eye bare. Antenna dark brown; pedicel with 2 moderate setae and some other short setae. Arista dark brown, very short pubescent. Palpus dark brown, with some setae. Vibrissa long. Some genal and postgenal setae, not as long as vibrissa, some of them curved upwards. Thorax. Scutum dark brown, grey dusted, with 3 dark brown vittae, the median one straight and the lateral ones broad and reaching apex of scutellum. With a few fine and quite long ground-setulae in addition to the usual setae. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without median setae. Mid tibia with 3 posterior setae on middle third. Arolium and pulvillus not enlarged. Wing. Smoky brown on costal margin, darker at base in male. Costal spine indistinct. Abdomen. Dark brown, with a median dark brown vitta and lateral quadrangular dark brown spots on tergites 1+2–4. Sternite 1 setulose.

Remarks. The species can be identified with the key by Stein (1911, as *Limnophora triplex*.). Like *L. pubiceps*, it also has haired eyes but lacks the median seta on fore tibia. Aedeagus as in Fig. 245.

Neolimnophora maritima (Röder, 1887)

Figs 125–128

Syntypes. 3 females of *Limnophora candicans* Villeneuve, 1906, junior synonym of *N. maritima*. France.

Diagnosis. Length of body. 5.0–6.5 mm (male, female). Head. Eyes broadly separated in both sexes, about one-third of head-width in female and a little narrower in male. Fronto-orbital plate broad; frons dark brown, very narrow in male, as broad as diameter of anterior ocellus. Fronto-orbital plate, ocellar triangle, face, parafacial and gena uniformly white-silver pruinose. Ocellar triangle white-silver pruinose, short in male and broad and long in female, reaching lunule. Antenna and arista dark brown. Palpus dark brown. Thorax. Scutum uniformly pale grey dusted. Acrostichals in 3–4 rows before suture. Dorsocentrals 2+4. Lower katepisternal fine and very close to posterior seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid femur with 2 preapical setae. Mid tibia with 2 posterior setae on middle third. Hind tibia with 1 short and fine median anterodorsal and anteroventral setae. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Uniformly pale grey dusted, as scutum; in male with 2 very faint brown spots on tergites 3 and 4, from certain angles. Sternite 1 bare.

Remarks. *Neolimnophora* is a small genus with only 2 valid species, characterized by the antenna and arista very short; anepimeron bare; wing without setulae on radial vein; and prosternum setulose on margins. The genus and the species can be easily identified with the key by Hennig (1959) to genera and with his key to species of *Neolimnophora*. Terminalia of male and female illustrated by Hennig (1959, text-figs 51c, 68b, plate 10 fig. 192, plate 14 fig. 283). A long series of male and female in ZMHU collection.

Neolimnophora virgo (Villeneuve, 1906)

Figs 129–132

Syntype. Female. France.

Diagnosis. Length of body. 4.5–5.5 mm (male, female). Very similar to the previous species, differing as follows: Head. Eyes broadly separated in both sexes, about one-third of head-width in female and a little narrower in male. Fronto-orbital plate broad, with margins touching at middle so that the frons is indistinct; in female orbital margins almost touching the margins of the broad ocellar triangle. Thorax. Acrostichals in 2–3 rows before suture. Abdomen. Uniformly pale grey dusted like the scutum, in male and female.

Remarks. For comments on the genus, see under *N. maritima*. The species can be separated from *N. maritima* with the key by Hennig (1959).

Spilogona acrostichalis (Stein, 1916)

Holotype. Male. Estonia.

Diagnosis. Length of body. 4.0 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown-silver pruinose from certain angles; fronto-orbital plate reddish brown close to lunule. Ocellar triangle brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 times width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum uniformly brown. Postpronotun and notopleuron grey dusted. Notopleuron not haired. Acrostichals developed, in 2 rows. Dorsocentrals 2+4. Anepisternum without interspatial setae. Haltere yellow. Calypters white. Legs. Brown. Fore tibia with 2 posterior setae on middle third. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with

4 anterodorsal setae; 2 anteroventrals and 1 posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be recognized by the rather long acrostichal setulae and can be identified with the key by Hennig (1959). The male terminalia were illustrated by (Hennig 1959, plate 11 fig. 223, plate 14 fig. 285).

Spilogona alpica (Zetterstedt, 1845)

Syntypes. 3 males, 1 female of *Limnophora latifrons* Stein, 1916, junior synonym of *S. alpica*. Italy and Austria.

Diagnosis. Length of body. 3.0–3.5 mm (male, female). Head. Frons broad in both sexes, half as wide as an eye in male, about one-third of head-width in female. Frons dark brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle grey dusted, very short. Ocellar setae very long. Eye without hairs. Antenna dark brown, postpedicel broad. Arista dark brown, very short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 times the width of postpedicel. Oral margin projecting forwards. Thorax. Scutum uniformly brown. Acrostichals in 2 rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum with 1 interspatial seta. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 1–2 anterodorsal setae; 2 posterior setae on middle third and 0 anteroventrals. Hind femur with 2 long anteroventral setae in apical third. Hind tibia with 3–4 anterodorsal setae; 1–2 anteroventrals and 2–3 posterodorsals. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959), who also gave illustrations of the male terminalia (Hennig 1959, plate 10 fig. 201, plate 14 fig. 290).

Spilogona anthrax (Bigot, 1885)

Syntypes. 2 males of *Limnophora squamosa* Stein, 1920b, junior synonym of *S. anthrax*. U.S.A.

Diagnosis. Length of body. 5.0 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 times the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Acrostichals developed, in 2–3 irregular rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere brown. Calypters brown, with darker margins. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 3–4 anterodorsal setae; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys to *Spilogona* species by Huckett (1932, as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona argentea (Stein, 1907)

Figs 133–136

Lectotype. Male. Paralectotype. Male. Lectotype designated by Pont (2004: 84). China.

Diagnosis. Length of body. 4.5 mm (male). Head. Male holoptic. Fronto-orbital plate and parafacial silver shiny. Face grey dusted. Ocellar triangle and gena brown. Ocellar triangle dark brown, very short. Ocellar setae long. Eye with hairs. Antenna dark brown. Arista dark brown, short pubescent. Profrons a little projecting. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Acrostichals developed, in 3–4 irregular rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum with 1 interspatial seta. Haltere yellowish-brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 3–4 anterodorsal setae; 3 anteroventrals in apical third; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Tergites 3–5 silver pruinose, contrasting with the brown tergite 1+2 and the 2 brown median spots on tergite 3. Sternite 1 bare.

Remarks. The species can be identified in the key by Hennig (1959) and is immediately recognised by the colour pattern of the abdomen.

Spilogona atricans (Pandellé, 1899)

Syntypes. 3 males, 2 females of *Limnophora grandis* Stein, 1914, junior synonym of *S. atricans*. Italy, France and Germany.

Diagnosis. Length of body. 7–8 mm (male, female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny from certain angles. Ocellar triangle dark brown, very short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura brown. Acrostichals developed, in 3–4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum with 1–3 interspatial setae. Haltere brownish. Calypters brown. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 3–4 anterodorsal setae; 1 submedian anteroventral; 2 very short posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. This species can be recognized by the rather long acrostichal setulae and can be identified with the key by Hennig (1959), who also illustrated the male terminalia (Hennig 1959, plate 13 fig. 277, plate 16 fig. 316).

Spilogona baltica (Ringdahl, 1918)

Syntypes. 2 males, 1 female. Germany.

Diagnosis. Length of body. 4.0–5.0 mm (male, female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny from certain angles. Ocellar triangle dark brown, very short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Acrostichals developed, in 2–3 irregular rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters brown. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind femur with posteroventral setae in basal third. Hind tibia with 2–3 anterodorsal setae; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who also illustrated the male terminalia (Hennig 1959, plate 11 fig. 216, plate 14 fig. 292).

Spilogona biseriata (Stein, 1916)

Holotype. Male. Germany.

Diagnosis. Length of body. 4.5 mm (male). Head. Male frons intermediate, about one-fourth of head-width. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin less than width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura brown, grey dusted, with 2 broad brown vittae. Acrostichals in 2 rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 4 anterodorsal setae; 2 submedian anteroventrals; 3 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who also illustrated the male terminalia (Hennig 1959, plate 11 fig. 218, plate 14 fig. 293).

Spilogona brunneisquama (Zetterstedt, 1845)

Syntypes. 3 males of *Limnophora armipes* Stein 1916, junior synonym of *S. brunneisquama*. Czech Republic and Sweden.

Diagnosis. Length of body. 6.0–7.0mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny under certain lights. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum dark brown. Postpronotum and notopleuron dark grey dusted. Acrostichals in 4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters deep yellow. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; 2 anteroventrals and 3 anterodorsals. Hind tibia with 3–5 anterodorsal setae; 2–3 anteroventrals; 2–3 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who also illustrated the male terminalia (Hennig 1959, plate 12 fig. 251, plate 14 fig. 296).

Spilogona caliginosa (Stein, 1916)

Syntypes. 3 males, 1 female. Austria.

Diagnosis. Length of body. 2.5–4.0 mm (male, female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin less than width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Presutural acrostichals developed and in 2 rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; 0–2 anterodorsals; without anteroventral. Hind tibia with 1–2 anterodorsal setae; 2–3 anteroventrals; and a row of short posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Uniformly brown, concolourous with thorax. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who also illustrated the male terminalia (Hennig 1959, plate 11 fig. 219, plate 14 fig. 297).

Spilogona concolor (Stein, 1920b)

Figs 137–140

Syntypes. 2 males. U.S.A.

Diagnosis. Length of body. 4.5 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena dark brown. Ocellar triangle dark brown, very short. Ocellar setae short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly dark brown. Presutural acrostichals developed, in 2 rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum with 1 interspatial seta. Haltere and calypters dark brown. Legs.

Dark brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with a row of anterodorsal setae; 2 submedian anteroventrals; 3 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky dark brown, lighter at apex. Costal spine indistinct. Abdomen. Uniformly dark brown. Sternite 1 bare.

Remarks. The uniformly dark colour of this species easily identifies it. The species can be identified with the keys to *Spilogona* species by Huckett (1932) (as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona costalis (Stein, 1907)

Lectotype. Male. Designated by Pont (2004: 84). China.

Diagnosis. Length of body. 4.5 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin less than width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura dark brown. Acrostichals in 2 rows before suture. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere dark brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; 1 anterodorsal; without anteroventral. Hind tibia with 2 anterodorsal setae; 2 submedian anteroventrals; a row of short posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia Hennig (1959, plate 13 figs 258–259, plate 15 figs 305–306).

Spilogona deflorata (Holmgren, 1872)

Paralectotypes. 1 male, 1 female of *Spilogona impar* (Stein, 1907), junior synonym of *S. deflorata*. Lectotype designation by Pont (2004: 86). China.

Diagnosis. Length of body. 4.0 mm (male), 4.5 mm (female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown, parafacial silver shiny from certain angles. Ocellar triangle dark brown, very short. Ocellar setae very short. Eye with sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura dark brown. Presutural acrostichals in 4 rows. Dorsocentrals 2+4. Notopleuron with a few setulae. Anepisternum with 1 interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2–3 anterodorsal setae; 2–3 anteroventrals and a row of short posterodorsals. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys by Hennig (1959, as *Spilogona impar*) and Huckett (1965). The male terminalia have been illustrated by Hennig (1959, plate 12 fig. 235, plate 16 fig. 322, as *Spilogona impar*) and Huckett (1965, figs 76, 182, 250).

Spilogona hirticeps (Stein, 1911)

Fig. 246

Paralectotypes. 2 males, 2 females. Lectotype in SMT, by designation of (Pont 2001: 472). Peru.

Diagnosis. Length of body. 5.0 mm (male, female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown, silver shiny from certain angles. Ocellar triangle dark brown, very short. Ocellar setae long. Eye with many hairs. Antenna dark brown. Arista dark brown, very short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly dark brown. Acrostichals not distinct before suture. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere dark brown. Calypters white. Legs. Brown. Fore tibia with a posterior seta. Mid tibia with 2 posterior setae on middle third; 1–2 anterodorsals; without anteroventral. Hind tibia with 1 anterodorsal seta; 3 anteroventrals on apical half; 3 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown along costal vein. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be easily recognized by the haired eyes and can be identified with the key by Stein (1911, as *Limnophora hirticeps*). Aedeagus as in Fig. 246.

Spilogona kuntzei (Schnabl,1911)

Syntypes. 2 males of *Limnophora montana* Stein, 1916, junior synonym of *S. kuntzei*. Austria and Romania.

Diagnosis. Length of body. 4.5–5.0 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny. Ocellar triangle dark brown, very short. Ocellar setae short. Eye with hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura pale grey dusted. Acrostichals in 2 rows before suture. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2 anterodorsal setae; 2 submedian anteroventrals; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Smoky brown. Costal spine short, but distinct. Abdomen. Sternite 1 with a very few setulae.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia Hennig (1959, plate 10 fig. 197, plate 16 fig. 321).

Spilogona leucogaster (Zetterstedt, 1838)

Figs 141–144

Syntypes. 2 females of *Limnophora nitidifrons* Stein, 1920b, junior synonym of *S. leucogaster.* U.S.A.

Diagnosis. Length of body. 4.5 mm (female). Head. Frons broad, about one-third of head-width. Fronto-orbital plate brown. Face, parafacial and gena silver pollinose. Ocellar triangle shiny dark brown, broad and long, reaching lunule. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin less than width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly shiny dark brown. Acrostichal setulae fine, in irregular rows. Dorsocentrals 2+4. Notopleuron with setulae. Anepisternum with 1 interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; 1 anterodorsal; without anteroventral. Hind tibia with 2 anterodorsal setae; 3–4 anteroventrals on apical third; 1–2 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Uniformly shiny brown. Sternite 1 bare.

Remarks. The female is easily recognized by the shiny dark brown body and the broad and glossy ocellar triangle. It can be identified with the keys to *Spilogona* species by Huckett (1932) (as subgenus of *Limnophora*), by Huckett (1965), and by Hennig (1959). The male and female terminalia were illustrated by Hennig (1959, text-fig. 58e, plate 12 fig. 236, plate 16 fig. 320).

Spilogona limnophorina (Stein, 1898)

Syntype. Male of *Limnophora rufitibia* Stein, 1920b, junior synonym of *S. limnophorina.* U.S.A.

Diagnosis. Length of body. 5.0 mm (male). Head. Male holoptic. Fronto-orbital plate, face, parafacial and gena silver pruinose. Ocellar triangle brown, very short. Ocellar setae short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 times the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum brown, grey pollinose, with a faint median brown vitta. Scutellum with preapical setulae on upper border of declivities (Huckett 1965, fig. 25). Presutural acrostichals in 2 irregular rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Coxae, femora and tarsi brown; tips of femora and tibiae yellow. Fore tibia with a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2 anterodorsal setae; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys by Huckett (1932), as *Limnophora* (*Spilogona*) *rufitibia*, and by Huckett (1965), as *S. limnophorina*.

Spilogona magnipunctata (Malloch, 1919)

Syntypes. 2 males of *Limnophora fumosa* Stein, 1920b, junior synonym of *S. magnipunctata*. U.S.A.

Diagnosis. Length of body. 5.2 mm (male). Head. Male holoptic. Fronto-orbital plate, face, parafacial and gena brown. Ocellar triangle brown, short. Ocellar setae long. Eye with very sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum dark brown, a little shiny; light brown on postpronotum and notopleuron. Acrostichals developed, in 2 rows presuturally. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2 anterodorsal setae; without anteroventral and posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona narina (Walker, 1849)

Holotype. Male of *Limnophora nigrifrons* Stein, 1920b, junior synonym of *S. narina*. U.S.A.

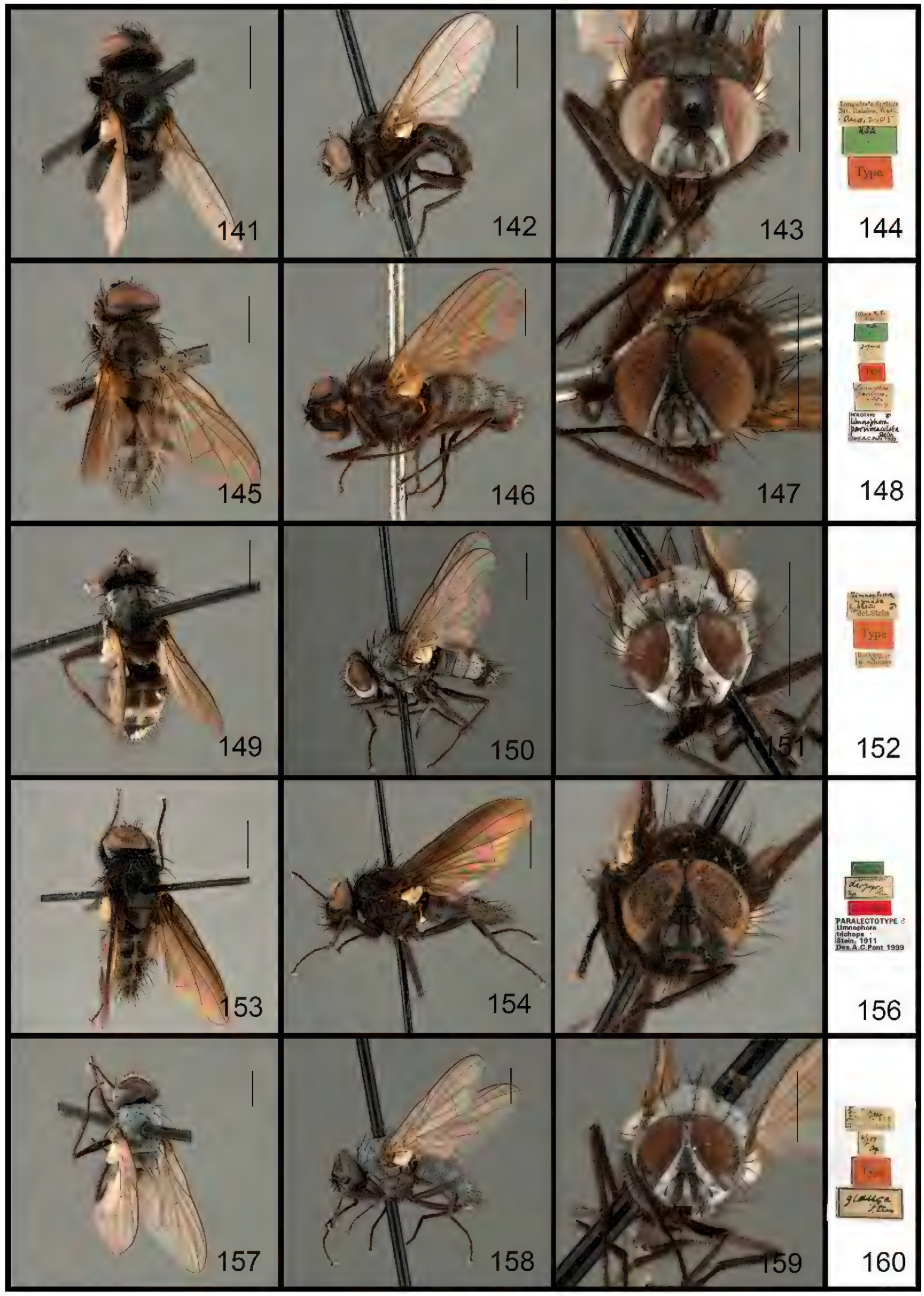
Diagnosis. Length of body. 5.0 mm (male). Head. Male dichoptic. Frons broad, about one-third of head-width. Fronto-orbital plate, ocellar triangle, face, parafacial, gena, antenna, arista and palpus uniformly dark brown. Ocellar triangle short. Ocellar setae long. Eye without hairs. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly shiny dark brown. Acrostichals fine, in irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters smoky brown. Legs. Brown. Fore tibia with 1 posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2 anterodorsal setae; 2 anteroventrals in apical third; 1 posterodorsal. Arolium and pulvillus not enlarged. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be recognized by the dark brown head and can be identified with the keys to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona nobilis (Stein, 1898)

Syntypes. 2 males. U.S.A.

Diagnosis. Length of body. 5.3 mm (male). Head. Male frons intermediate, about one-fourth of head-width. Fronto-orbital plate, face, parafacial and gena brown, silver pollinose from certain angles. Ocellar triangle brown, very short. Ocellar setae very short. Eye with sparse hairs. Antenna dark brown. Arista



Figures 141–160. *Spilogona leucogaster*, syntype female of *Limnophora nitidifrons*: (141) dorsal habitus; (142) lateral habitus; (143) head in frontal view; (144) labels; *Spilogona parvimaculata*, holotype male: (145) dorsal habitus; (146) lateral habitus; (147) head in frontal view; (148) labels; *Spilogona scutulata*, syntype male of *Limnophora signata*: (149) dorsal habitus; (150) lateral habitus; (151) head in frontal view; (152) labels; *Spilogona trichops*, paralectotype male: (153) dorsal habitus; (154) lateral habitus; (155) head in frontal view; (156) labels; *Spilogona varsaviensis*, syntype male of *Limnophora glauca*: (157) dorsal habitus; (158) lateral habitus; (159) head in frontal view; (160) labels. Scale bars: 1.0 mm.

dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly shiny dark brown. Acrostichals fine, in irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 3 anterodorsal setae; 2 anteroventrals on apical third; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona obscuripennis (Stein, 1916)

Holotype. Male. Russia.

Diagnosis. Length of body. 5.0 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle dark brown, very short. Ocellar setae long. Eye with sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Presutural acrostichals in 4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere brown. Calypters brown. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 1 posterior setae on middle third; without anteroventral and anterodorsal. Hind femur with posteroventral setae on basal half, and a complete row of anteroventrals. Hind tibia with 2–3 anterodorsal setae; 2–3 submedian anteroventrals; 2 posterodorsals. Arolium and pulvillus enlarged. Wing. Smoky brown. Costal spine distinct, long. Abdomen. Uniformly dark brown. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia Hennig (1959, plate 12 fig. 249, plate 16 fig. 333). It is also in the keys to *Spilogona* by Huckett (1932 (as subgenus of *Limnophora*) and 1965).

Spilogona parvimaculata (Stein, 1920b)

Figs 145–148

Holotype. Male. U.S.A.

Diagnosis. Length of body. 5.2 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown, silver shiny from certain angles. Ocellar triangle dark brown, very short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly brown. Acrostichals developed, in 3 series presuturally. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters yellowish. Legs. Brown. Fore tibia with 1 posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 2–3 anterodorsal setae; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Yellowish. Costal spine indistinct. Abdomen. Pale grey dusted, with 2 well marked brown longitudinal spots on tergite 3, 2 faint spots on tergite 4, and a faint median stripe on tergite 5. Sternite 1 bare.

Remarks. The species can be identified with the key to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*).

Spilogona pseudodispar (Frey, 1915)

Syntypes. 3 males, 1 female of *Limnophora subrostrata* Stein, 1920b, junior synonym of *S. pseudodispar*. Canada.

Diagnosis. Length of body. 5.0–5.5 mm (male, female). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face, parafacial brown silver shiny from certain angles. Gena reddish brown. Ocellar triangle dark brown, very short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Oral margin projecting forwards. Thorax. Scutum and pleura brown; postpronotum and notopleuron grey dusted from certain angles. Acrostichals developed, in 3–4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 2 anterodorsal setae; 2–3 anteroventrals; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys by Hennig (1959), by Huckett (1932, as *Limnophora* (*Spilogona*) *subrostrata*) and by Huckett (1965). The male terminalia were illustrated by Hennig (1959, plate 12 fig. 230, plate 17, fig. 334) and by Huckett (1965, Figs 87, 158, 251).

Spilogona rufitarsis (Stein, 1920b)

Syntypes. 1 male, 2 females. U.S.A.

Diagnosis. Length of body. 6.0–6.2 mm (male, female). Head. Male frons intermediate. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena grey dusted. Ocellar triangle short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum grey dusted with a median faint brown vitta. Presutural acrostichals in 2 rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Coxae and femora brown, grey dusted; tibiae and tarsi yellow. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroven-

tral and anterodorsal. Hind tibia with 2 anterodorsal setae; 2 anteroventrals; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine short, but distinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the keys to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*) and by Huckett (1965).

Spilogona scutulata (Schnabl, 1911)

Figs 149–152

Syntypes. 3 males, 2 females of *Limnophora signata* Stein, 1914, junior synonym of *S. scutulata*. Germany and Poland.

Diagnosis. Length of body. 3.0–4.0 mm (male, female). Head. Male frons intermediate. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny. Ocellar triangle short. Ocellar setae short. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 times the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum grey dusted with a broad postsutural median brown vitta; with few ground-setulae; scutellum brown. Acrostichals developed, in 2 regular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Coxae and femora brown, grey dusted; tibiae and tarsi yellow. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anteroventral and anterodorsal. Hind tibia with 2–3 anterodorsal setae; 1–2 anteroventrals; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine short, but distinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who also gave illustrations of the male and female terminalia (Hennig 1959, text-fig. 58k, plate 10 fig. 204, plate 17 fig. 338).

Spilogona semicinerea (Stein, 1911)

Figs 247–250

Paralectotypes. 1 male, 1 female. Lectotype in SMT, by designation of Pont (2001: 469). Peru.

Diagnosis. Length of body. 4.0 mm (male), 4.2 mm (female). Head. Male frons intermediate. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena silver shiny. Ocellar triangle short. Ocellar setae long. Eye with very sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura uniformly dark brown. Presutural acrostichals in 2 rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere brown. Calypters white. Legs. Dark brown. Fore tibia without a posterior seta. Mid tibia with 1 posterior seta on middle third; 1 anterodorsal; without anteroventral. Hind tibia with 2 anterodorsal setae; 2 anteroventrals; without posterodorsal. Arolium and pulvillus short. Wing. Cross veins r-m and m-m with a faint brown cloud. Costal spine distinct. Abdomen. Tergite 1+2 dark brown; tergite 3 dark brown on disc and intensely silver pruinose laterally; tergites 4 and 5 intensely silver pruinose, tergite 4 with 2 small brown clouds close to its posterior mrgin. Sternite 1 bare.

Remarks. The species can be identified in the key by Stein (1911, as *Limnophora semicinerea*). Aedeagus as in Fig. 247 and ovipositor as in Figs 248–250.

Spilogona spinicosta (Stein, 1907)

Paralectotypes. 2 males, 2 females. Lectotype in ZIN, designated by Pont (2001: 469). China.

Diagnosis. Length of body. 3.0 mm (male, female). Head. Male dichoptic. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Lower orbital seta directed backwards and outwards. Ocellar triangle reaching halfway to lunule. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum brown. Acrostichals in 2 rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere brown. Calypters white, almost subequal. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; 1 anterodorsal; without anteroventral. Hind tibia with 1 anterodorsal seta; 1–2 anteroventrals; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal margin from humeral cross vein to end of subcostal vein with a series of spines. Abdomen. Sternite 1 bare.

Remarks. A very distinct species of *Spilogona*, very small, with the lower orbital seta directed backwards and outwards in male and a row of short spines along costal margin, from humeral cross vein to the end of subcostal vein. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia (Hennig 1959, plate 13 fig. 268, plate 17 fig. 347).

Spilogona taeniata (Stein, 1916)

Holotype. Male. Georgia.

Diagnosis. Length of body. 5.5 mm (male). Head. Male holoptic. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown, grey dusted from certain angles. Ocellar triangle short. Ocellar setae long. Eye with sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura dark brown. Presutural acrostichals in 2 rows. Dorsocentrals 2+3. Notopleuron with few setulae close to posterior seta. Anepisternum with 1 interspatial seta. Haltere yellow. Calypters white. Legs. Dark brown. Fore tibia without a posterior seta. Mid tibia with 1 anterodorsal seta, 2 posterodorsals and 2 posteroventrals. Hind tibia with 2–3 anterodorsal setae;

3 anteroventrals; 3 posterodorsals. Arolium and pulvillus not enlarged. Wing. Smoky brown, darker near base. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia Hennig (1959, plate 12 fig. 238, plate 18 fig. 355).

Spilogona tenuis Hennig, 1959

Holotype. Male. Sweden.

Diagnosis. Length of body. 4.0 mm (male). Head. Male frons intermediate. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena brown, silver shiny from certain angles. Ocellar triangle short. Ocellar setae long. Eye with very sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura brown. Presutural acrostichals in 4 rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Light brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 2 anterodorsal setae; 1–2 anteroventrals; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male terminalia (Hennig 1959, plate 12 fig. 239, plate 18 fig. 356).

Spilogona torreyae (Johannsen, 1916)

Syntype. 1 male of *Limnophora umbrina* Stein, 1920b, junior synonym of *S. torreyae*. U.S.A.

Diagnosis. Length of body. 5.0 mm (male). Head. Male holoptic, orbits touching in middle of frons. Eyes enlarged, the upper ommatidia broader than the lower ones. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Frontal setae absent. Ocellar triangle short. Ocellar setae absent. Eye with very sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura brown. Presutural acrostichals in 2 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters yellowish. Legs. Brown. Fore tibia with 1 posterior seta. Mid tibia with 2 posterior setae on middle third; without anterodorsal and anteroventral. Hind tibia with 1 anterodorsal seta; without anteroventral and posterodorsal. Arolium and pulvillus not enlarged. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be recognized by the broad eyes, with the the upper ommatidia larger than the lower ones and by the absence of frontal and ocellar setae. It can be identified with the key to *Spilogona* by Huckett (1932, as subgenus of *Limnophora*).

Spilogona trichops (Stein, 1911)

Figs 153–156; 251–253

Paralectotypes. 1 male, 1 female. Lectotype in SMT, designated by Pont (2001: 485). Bolivia.

Diagnosis. Length of body. 6.0 mm (male, female). Head. Male holoptic, orbits almost touching in middle of frons. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena brown. Ocellar triangle short. Ocellar setae long. Eye enlarged, the upper ommatidia broader than the lower ones, with many hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about the same width as postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura dark brown. Presutural acrostichals in 4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Dark brown. Fore tibia without a posterior seta. Mid tibia with 1 median posterior seta; without anterodorsal and posteroventral. Hind tibia with 1 median anterodorsal seta; without anteroventral and posterodorsal. Arolium and pulvillus not enlarged. Wing. Smoky brown, much darker along the costal vein. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species is easily recognized by the haired eyes and the dark brown wing margin along the costal vein. It can be identified with the key by Stein (1911, as *Limnophora trichops*). Ovipositor as in Figs 251–253.

Spilogona tundrae (Schnabl, 1915)

Syntype. Male. Russia.

Diagnosis. Length of body. 5.0 mm (male). Head. Male holoptic. Fronto-orbital plate, ocellar triangle, face and parafacial brown. Gena reddish brown. Ocellar triangle dark brown, very short. Ocellar setae long. Eye without hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Oral margin projecting forwards. Thorax. Scutum and pleura dark brown. Acrostichals developed, in 3–4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum with 2 interspatial setae. Haltere yellow. Calypters white. Legs. Dark brown. Fore tibia without a posterior seta. Mid tibia with 1–2 anterodorsal setae, 1–4 posterodorsals, 1–3 anteroventrals and 1 posteroventral. Hind tibia with 1–3 anterodorsal setae; 2–4 anteroventrals; 1–2 posterodorsals. Arolium and pulvillus short. Wing. Smoky brown. Costal spine indistinct. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959), who illustrated the male and female terminalia (Hennig 1959: text-fig. 58b, plate 13 figs 275–276, plate 18 figs 361, 366).

Spilogona tundrica (Schnabl, 1911)

Syntype. Male. Russia.

Diagnosis. Length of body. 5.5 mm (male). Head. Male frons intermediate. Frons, fronto-orbital plate, ocellar triangle, face, parafacial and gena brown; parafacial grey dusted from

certain angles. Ocellar triangle short. Ocellar setae long. Eye with sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Thorax. Scutum and pleura dark brown. Acrostichals quite long, especially postsuturally, in 4 irregular rows. Dorsocentrals 2+4. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters yellowish. Legs. Dark brown. Fore tibia without a posterior seta. Mid tibia with 2 anterodorsal setae, 2 posterodorsals, 2 anteroventrals and 1 posteroventral. Hind tibia with 1–2 anterodorsal setae; 2–3 anteroventrals; 1 posterodorsal. Arolium and pulvillus not enlarged. Wing. Smoky brown, a little darker along costal vein. Costal margin with well-developed spines, long as far as apex of subcosta and decreasing in size to the apex of vein R_{2+3}. Abdomen. Sternite 1 bare.

Remarks. The species can be identified with the key by Hennig (1959) who illustrated the male and female terminalia (Hennig 1959: text-fig. 58a, plate 11 fig. 222, plate 17 fig. 352).

Spilogona varsaviensis (Schnabl, 1911)

Figs 157–160

Syntypes. 2 males, 3 females of *Limnophora glauca* Stein, 1916, junior synonym of *S. varsaviensis*. Poland.

Diagnosis. Length of body. 3.5–5.0 mm (male, female). Head. Male holoptic. Frons brown. Fronto-orbital plate, ocellar triangle, face, parafacial and gena, silver shiny. Ocellar triangle short. Ocellar setae long. Eye with very sparse hairs. Antenna dark brown. Arista dark brown, short pubescent. Palpus dark brown. Gena at lowest eye margin about 1.5 the width of postpedicel. Oral margin not projecting forwards. Thorax. Scutum and pleura bluish-grey dusted. Presutural acrostichals in 2 rows. Dorsocentrals 2+3. Notopleuron without setulae. Anepisternum without interspatial seta. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae, without anterodorsal and posteroventral. Hind tibia with 1 anterodorsal seta; 1–2 anteroventrals; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Abdomen. Bluish-grey dusted, tergites 1+2–4 with lateral brown spots; tergite 5 with a faint median brown vitta. Sternite 1 bare.

Remarks. The species can be identified in the key by Hennig (1959) who gave illustrations of the male terminalia (Hennig 1959, plate 10 fig. 195, plate 18 fig. 359).

Syllimnophora aliena (Stein, 1911)

Figs 161–164

Paralectotypes. 6 males, 4 females. Lectotype in SMT, designated by Pont (2001: 462). Bolivia, Peru, Chile.

Diagnosis. Length of body. 5.0–5.3 mm (male), 5.2–5.5 mm (female). Head. Male about one-fourth of head-width. Frons brown, silver-golden pruinose. Fronto-orbital plate, parafacial and gena brown; gena with a little grey dust below. Ocellar triangle silver pollinose on upper half and golden pollinose on lower half; long, almost reaching lunule. Ocellar setae long and with many additional setulae. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards and with many black setae besides the vibrissa. Thorax. Scutum dark brown, silver pruinose along the dorsocentral rows of setae when viewed from behind. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae. Hind femur with an anteroventral row of setae on apical half. Hind tibia with 3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. M slightly curved forwards close to apex. Abdomen. Dark brown, with a median silver pruinose vitta on tergites 1+2–4 and lateral spots on all tergites, silver and golden pruinose. Sternite 5 golden pruinose.

Remarks. The species can be recognized by the slightly narrower male frons which is silver-golden pruinose; the brown haltere; the golden pruinose spots on abdomen; and the golden pruinose sternite 5. It can be identified with the keys by Stein (1911, as *Limnophora aliena*) and by Malloch (1934, as *Syllimnophora aliena*).

Syllimnophora candidifrons (Stein, 1911)

Figs 165–168

Paralectotypes. 3 males, 4 females. Lectotype in SMT, designated by Pont (2001: 466). Bolivia.

Diagnosis. Length of body. 5.5–6.0 mm (male, female). Head. Frons broad in both sexes, about one-third of head-width. Frons uniformly silver-white pruinose. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose from certain angles. Ocellar triangle indistinct. Ocellar setae long and with many additional setulae. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards and with many black setae besides the vibrissa. Thorax. Scutum dark brown, with 2 lateral silver pruinose marks before suture. Postpronotum and notopleuron partially silver pruinose. Dorsocentrals 2+3. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae. Hind femur with an anteroventral row of setae on apical half. Hind tibia with 3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. M slightly curved forward close to apex. Abdomen. Dark brown, with a median silver pruinose vitta and broad lateral spots on all tergites. Sternite 5 brown, with a little grey dust.

Remarks. The species can be recognized by the broad male frons which is uniformly silver-white pruinose; the brown haltere; and the white pruinose spots on abdomen. It can be identified with the key by Stein (1911, as *Limnophora candidifrons*).

Syllimnophora clavitibia (Stein, 1911)

Figs 169–172

Paralectotypes. 5 males, 3 females. Lectotype in SMT, designated by Pont, 2001a: 467). Bolivia and Peru.

Diagnosis. Length of body. 5.5–6.0 mm (male, female). Head. Frons broad in both sexes, about one-third of head-width. Frons brown. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose from certain angles. Ocellar triangle silver puinose, broad, reaching lunule. Ocellar setae very long and with some additional setulae. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards, and with many black setae besides the vibrissa. Thorax. Scutum dark brown, with 2 silver pruinose vittae along dorsocentral rows of setae. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere brown. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 1 posterior seta; in male enlarged on apical third and with many short setae on all surfaces, longer apicad. Hind femur with an anteroventral row of setae on apical half. Hind tibia with 2–3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. M slightly curved forward close to apex. Abdomen. Dark brown, with a median silver pruinose vitta and lateral spots on all tergites.

Remarks. The species can be immediately recognized in the male by the enlarged apical third of mid tibia, with many short setae in all surfaces which become longer apicad. It can be identified with the key by Stein (1911, as *Limnophora clavitibia*).

Syllimnophora compressifrons (Stein, 1904)

Figs 173–176; 254

Syntype. Male. Peru.

Diagnosis. Length of body. 5. 0 mm (male). Head. Male frons about one-fourth of head-width. Frons brown. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose from certain angles. Ocellar triangle silver puinose, reaching lunule. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin strongly projecting forwards, and with a few black setae besides the vibrissa. Thorax. Scutum dark brown, silver pruinose, with 3 brown vittae, all broad and reaching tip of scutellum. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae. Hind femur with an anteroventral row of setae on apical half. Hind tibia with 3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus enlarged. Wing. Smoky brown along costa. Costal spine distinct. M slightly curved forward close to apex. Abdomen. Dark brown, with a median silver pruinose vitta and 2 lateral stripes on all tergites.

Remarks. The species can be recognized by the slightly narrower male frons; the yellow haltere; the oral margin strongly projecting forwards; the smoky brown wing along costa. It can be identified with the key by Stein (1911, as *Limnophora compressifrons*). Aedeagus as in Fig. 254.

Syllimnophora femorata (Stein, 1911)

Figs 177–180

Paralectotypes. 2 males, 2 females. Lectotype in SMT, designated by Pont (2001: 470). Chile.

Diagnosis. Length of body. 5.0 mm (male, female). Head. Male frons about one-fourth of head-width. Frons brown. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose from certain angles. Ocellar triangle silver pruinose, reaching lunule. Ocellar setae very short. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards, and with a few black setae besides the vibrissa. Thorax. Scutum dark brown, silver pruinose, with 3 brown vittae, all broad and reaching tip of scutellum. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 2 posterior setae. Hind femur with an anteroventral row of setae on apical half and 4–5 ventral setae on basal half. Hind tibia with 2–3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus enlarged. Wing. Costal spine indistinct. M slightly curved forward close to apex. Abdomen. Dark brown, with a median silver pruinose vitta on tergites 3 and 4 and silver pruinose spots on tergites 3–5.

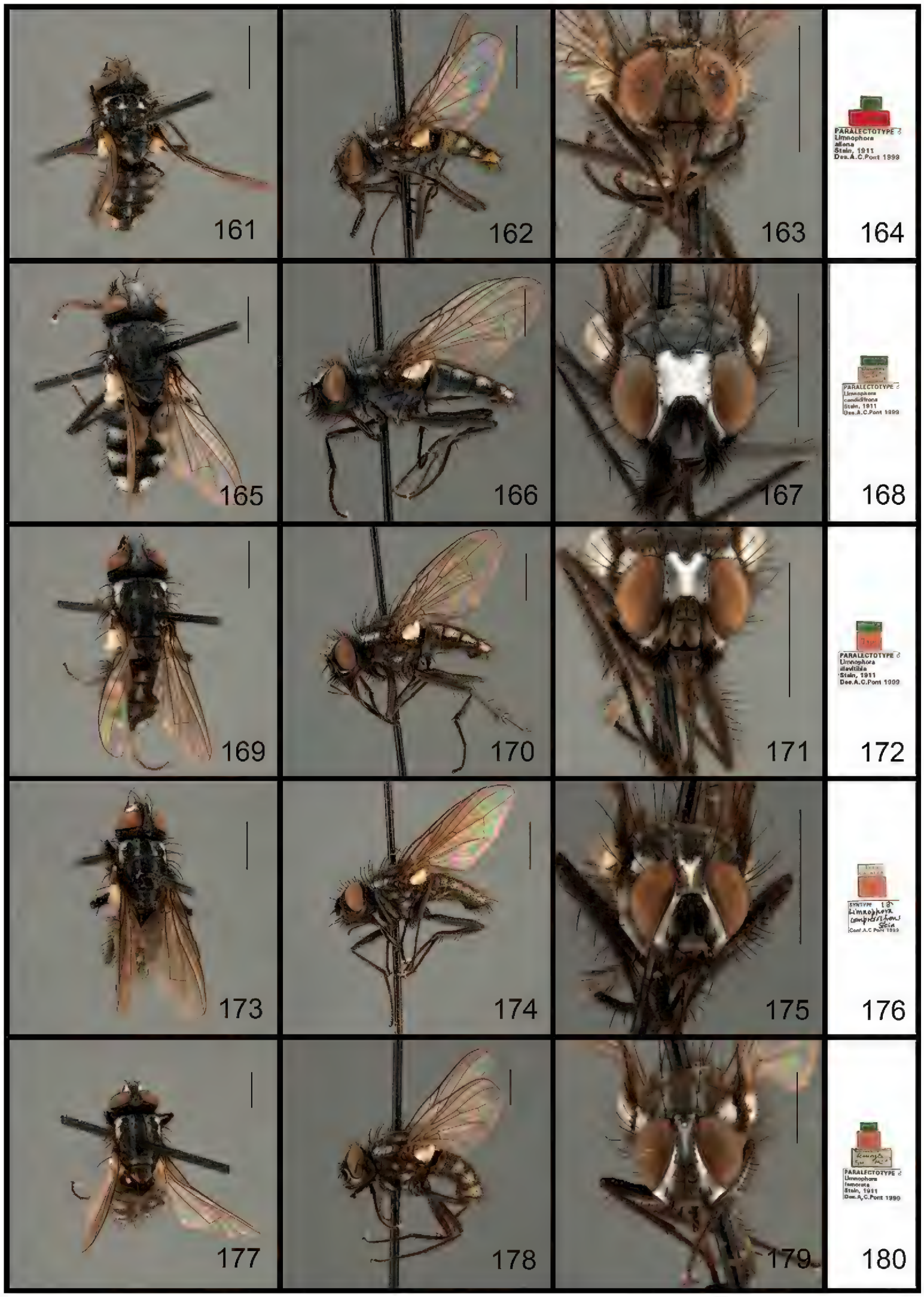
Remarks. The species can be recognized by the slightly narrower male frons; the yellow haltere; and the presence of 4–5 ventral setae on basal half of hind femur. It can be identified with the keys by Stein (1911, as *Limnophora femorata*) and by Malloch (1934, as *Syllimnophora femorata*).

Syllimnophora setitibia (Stein, 1911)

Figs 181–184

Paralectotypes. 2 males, 2 females. Lectotype in SMT, designated by Pont (2001: 484). Chile.

Diagnosis. Length of body. 5.0 mm (male, female). Head. Male frons a liitle less than one-third of head-width. Frons silvery-white pruinose. Fronto-orbital plate, parafacial, face and gena brown. Ocellar triangle not distinct. Ocellar setae long, with many additional rather long setulae. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards. Thorax. Scutum dark brown, silver pruinose, with 3 brown vittae, all broad and reaching tip of scutellum. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with a series of about 8 posterior setae. Hind femur with an anteroventral row of setae on apical half and 4–5 ventral setae on basal half. Hind tibia with 2–3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus not enlarged.



Figures 161–180. *Syllimnophora aliena* (Stein), paralectotype male: (161) dorsal habitus; (162) lateral habitus; (163) head in frontal view; (164) labels; *Syllimnophora candidifrons* (Stein), paralectotype male: (165) dorsal habitus; (166) lateral habitus; (167) head in frontal view; (168) labels; *Syllimnophora clavitiba* (Stein), paralectotype male: (169) dorsal habitus; (170) lateral habitus; (171) head in frontal view; (172) labels; *Syllimnophora compressifrons* (Stein), syntype male: (173) dorsal habitus; (174) lateral habitus; (175). head in frontal view; (176) labels; *Syllimnophora femorata* (Stein), paralectotype male: (177) dorsal habitus; (178) lateral habitus; (179) head in frontal view; (180) labels. Scale bars : 1.0 mm.

Wing. Costal spine indistinct. M slightly curved forward close to apex. Abdomen. Dark brown, broadly silver pruinose at middle and on lateral sides of all tergites; with a vitta on tergites 3 and 4 and silver pruinose spots on tergites 3–5.

Remarks. The species can be immediately recognized by the row of posterior seta on mid tibia. It can be identified with the key by Stein (1911, as *Limnophora setitibia*).

Syllimnophora zebrina (Bigot, 1885)

Figs 185–188

Paralectotype. 1 male of *Limnophora auriflua* Stein, 1911, junior synonym of *S. zebrina*. Lectotype in SMT, designated by Pont (2001: 464). Chile.

Diagnosis. Length of body. 6.5 mm (male). Head. Male frons about one-fourth of head-width, brown. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose from certain angles. Ocellar triangle grey pruinose, reaching lunule. Ocellar setae not differentiated from the many other setae on ocellar triangle. Antenna dark brown. Arista dark brown, bare. Palpus dark brown. Oral margin projecting forwards. Thorax. Scutum dark brown, silver pruinose, with 3 brown vittae, all broad and reaching tip of scutellum. Postpronotum and notopleuron silver pruinose. Dorsocentrals 2+3. Haltere yellow. Calypters white. Legs. Brown. Fore tibia without a posterior seta. Mid tibia with 3 posterior setae. Hind femur with an anteroventral row of setae on apical half and 4–5 ventral setae on basal half. Hind tibia with 3 anterodorsal setae on middle third; 1 submedian anteroventral; without posterodorsal. Arolium and pulvillus enlarged. Wing. Smoky brown at base. Costal spine indistinct. M slightly curved forward close to apex. Abdomen. Dark brown; tergites 3 and 4 with a median and lateral silver spots; tergite 5 with lateral golden pruinose spots.

Remarks. The species can be recognized by the yellow haltere; darkened wing; and the golden pruinose lateral spots on tergite 5. It can be identified with the keys by Stein (1911, as *Limnophora auriflua*) and by Malloch (1934, as *Syllimnophora auriflua*).

Thaumasiochaeta compressitarsis (Stein, 1911)

Figs 189–192

Paralectotypes. 1 male, 1 female. Lectotype in SMT, designated by Pont (2001: 467). Peru.

Diagnosis. Length of body. 4.5 mm (male, female). Head. Male frons about one-third of head-width, brown. Fronto-orbital plate, parafacial, face and gena brown, silver pruinose close to antennal insertion from certain angles. Ocellar triangle indistinct. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown, long, enlarged and flat. Oral margin projecting forwards. Thorax. Scutum dark brown. Dorsocentrals 2+3. Katepisternals 1:1. Haltere brown. Calypters white. Legs. Brown. Fore tibia with 1 very long dorsal preapical seta. Fore tarsomere 1 with rather long anterodorsal and posterodorsal setae; tarsomere 2 with strong dorsal and ventral setae. Mid tibia with 3 strong posterior setae. Mid tarsomeres with many setae, longer on tarsomeres 4 and 5. Hind femur bowed on basal third; a series of fine setae with curled tips on basal fourth. Hind tibia with 1 median anterodorsal seta; without anteroventral and posterodorsal. Mid and hind tarsomeres a little flattened. Arolium and pulvillus not enlarged. Wing. Smoky brown. Costa with spines as far as apex of vein R_{2+3}. Abdomen. Dark brown.

Remarks. The male can be recognized by the chaetotaxy of the fore and hind tarsomeres and the chaetotaxy and shape of the hind femur. It was keyed by Couri (1999) and by Couri and Carvalho (2002). Couri (1999, figs 40–48) revised the genus and gave illustrations of the morphologically distinctive characters and of the male and female terminalia.

Thaumasiochaeta incaica (Stein, 1911)

Figs 193–196

Paralectotypes. 1 male, 1 female. Lectotype in SMT, designated by Pont (2001: 474). Bolivia.

Diagnosis. Length of body. 4.2 mm (male), 4.5 mm (female). Head. Male frons about one-third of head-width, brown. Fronto-orbital plate, parafacial, face and gena strongly golden pruinose. Ocellar triangle reaching halfway to lunule. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown, long, enlarged and flat. Oral margin only slightly projecting forwards. Thorax. Scutum dark brown. Dorsocentrals 2+3. Katepisternals 1:1. Haltere brown. Calypters white. Legs. Brown. Fore tibia with 1 long dorsal seta in apical third, its apex flat and triangular in shape. Mid tibia with 3–4 anterodorsal and posterodorsal setae on middle third and 2 submedian anteroventrals. Hind femur bowed on basal third. Hind tibia with 5 anterodorsal setae; without anteroventral and posterodorsal. Arolium and pulvillus short. Wing. With smoky brown spots on disc and at tip between costal-R_{2+3} and R_{4+5}-M. Costa with spines, stronger close to the tip of subcosta. Abdomen. Brown, broadly grey pollinose.

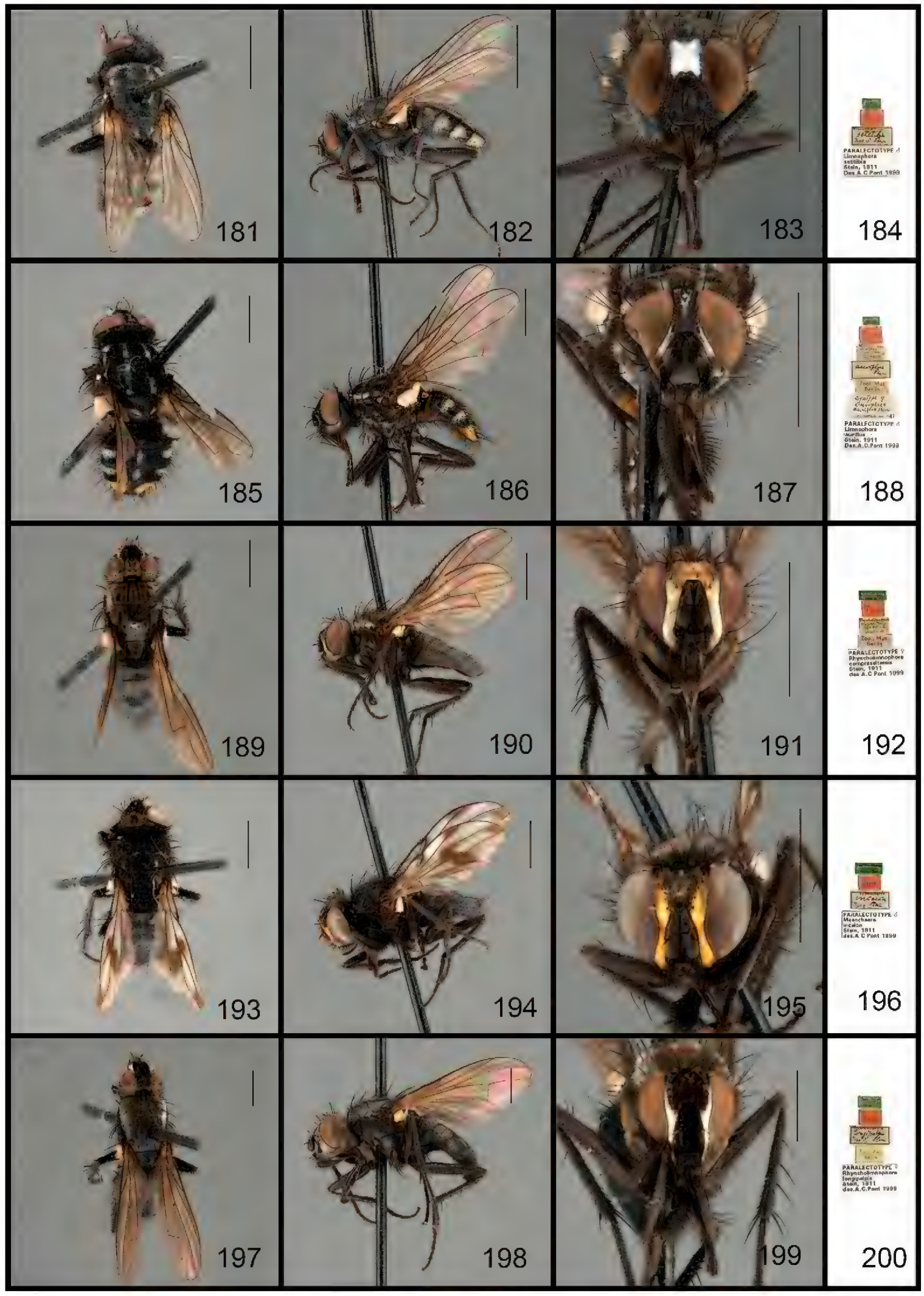
Remarks. The male can be recognized by the chaetotaxy of the legs and the spots on the wing. It was keyed by Couri (1999) and by Couri and Carvalho (2002). The wing was illustrated by Couri (1999, fig. 28).

Thaumasiochaeta longipalpis (Stein, 1911)

Figs 197–200

Paralectotype. Female. Lectotype in SMT, designated by Pont (2001: 476). Peru.

Diagnosis. Length of body. 5.5 mm (female). Head. Female frons broad, about one-third of head-width, brown. Fronto-orbital plate, parafacial, face and gena strongly silvery pruinose from certain angles. Ocellar triangle indistinct. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown, very long, enlarged and flat. Oral margin strongly projecting forwards. Thorax. Scutum brown; with two lateral



Figures 181–200. *Syllimnophora setitibia*, paralectotype male: (181) dorsal habitus; (182) lateral habitus; (183) head in frontal view; (184) labels; *Syllimnophora zebrina*, paralectotype male of *Limnophora auriflua*: (185) dorsal habitus; (186) lateral habitus; (187) head in frontal view; (188) labels; *Thaumasiochaeta compressitarsis*, paralectotype female: (189) dorsal habitus; (190) lateral habitus; (191) head in frontal view; (192) labels; *Thaumasiochaeta incaica*, paralectotype male: (193) dorsal habitus; (194) lateral habitus; (195) head in frontal view; (196) labels; *Thaumasiochaeta longipalpis*, paralectotype female: (197) dorsal habitus; (198) lateral habitus; (199) head in frontal view; (200) labels. Scale bars : 1.0 mm.

grey pruinose vittae from postscutum to margin of scutellum. Dorsocentrals 2+3. Katepisternals 1:2. Haltere brown. Calypters white. Legs. Brown. Fore tibia without median seta. Mid tibia with 2–3 anterodorsal setae, 2 posterodorsals, without anteroventral. Hind tibia with 2 anterodorsal setae, 3 anteroventrals, 1 posterodorsal on basal third. Arolium and pulvillus very short. Wing. Smoky brown. Costal spines not developed as in the congeners. Abdomen. Brown, broadly grey pollinose.

Remarks. The male can be recognized by the very long palpus and the strongly projecting oral margin. It was keyed by Couri (1999) and by Couri and Carvalho (2002). The male and female terminalia were illustrated by Couri (1999, figs 51–55).

Thaumasiochaeta nigriceps (Stein, 1911)

Figs 201–204

Paralectotypes. 1 male, 1 female. Lectotype in SMT, designated by Pont (2001: 478). Peru.

Diagnosis. Length of body. 4.0 mm (male), 4.5 mm (female). Head. Male frons about one-third of head-width. Frons, fronto-orbital plate, parafacial, face and gena strongly golden pruinose. Ocellar triangle reaching halfway to lunule. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown, long, enlarged and flat. Oral margin strongly projecting forwards. Thorax. Scutum dark brown. Dorsocentrals 2+3. Katepisternals 1:1. Haltere brown. Calypters white. Legs. Brown. Male fore tibia with 1 long ventral seta on apical third, its apex flat, triangular in shape. Mid tibia with 2 anterodorsal, 2 posterodorsal and 2 anteroventral setae, all on middle third. Hind femur bowed on basal third. Hind tibia with 2 anterodorsal, 2 posterodorsal and 2 anteroventral setae, all on middle third. Arolium and pulvillus short. Wing. Clear. Costal spines distinct. Abdomen. Brown, broadly grey pollinose.

Remarks. It can be recognized by the oral margin strongly projecting forwards; the wing unspotted; and the male fore tibia with 1 long ventral seta on apical third, its apex flat and triangular in shape. It was keyed by Couri (1999) and by Couri and Carvalho (2002). Morphological features and the male and female terminalia were illustrated by Couri (1999, figs 29–39).

Thaumasiochaeta pilitarsis Stein, 1911

Figs 205–208

Paralectotypes. 2 males, 2 females. Lectotype in SMT, designated by Pont (2001: 480). Peru and Bolivia.

Diagnosis. Length of body. 6.0 mm (male, female). Head. Male frons about one-third of head-width. Frons, fronto-orbital plate, parafacial, face and gena brown. Ocellar triangle indistinct. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare, its tip enlarged into a triangle. Palpus dark brown, long and flat. Oral margin projecting forwards. Thorax. Scutum dark brown. Dorsocentrals 2+3. Katepisternals 1:1. Haltere brown. Calypters white, margin of lower one dark brown. Legs. Brown. Male fore tibia with 1 very long dorsal preapical seta. Fore tarsomere 1 with rather long anterodorsal and posterodorsal setae; ventral surface with 1 basal and 1 apical seta and many short brownish-red spine-like setae between them; tarsomere 2 with 3 strong ventral setae. Mid tibia with 3 anterodorsals, 3 posterodorsals and 2–3 anteroventrals, all on middle third. Mid tarsomere 2 with many anterodorsal and posterodorsal setae. Hind coxa with rows of strong black setae curved at tips. Hind tibia with with many long and fine setae on anterodorsal and posterodorsal surfaces. Arolium and pulvillus not enlarged. Wing. Smoky brown. Costal spines present as far as tip of vein R_{2+3}. Abdomen. Dark brown.

Remarks. The species can be recognized by the arista, with its tip enlarged into a triangle; margin of lower calypter dark brown; chaetotaxy of fore tarsomeres 1 and 2; and hind coxa with rows of strong black setae that are curved at tips. It was keyed by Couri (1999) and by Couri and Carvalho (2002). The morphological features and the male and female terminalia were illustrated by Couri (1999, figs 1–13).

Thaumasiochaeta variegata (Stein, 1911)

Figs 209–212

Paralectotypes. 2 males, 2 females. Lectotype in SMT, designated by Pont (2001: 487). Peru.

Diagnosis. Length of body. 3.5–4.0 mm (male), 4.5–5.0 mm mm (female). Head. Male frons about one-third of head-width, brown. Fronto-orbital plate, parafacial, face and gena strongly golden pruinose. Ocellar triangle reaching halfway to lunule. Ocellar setae very long. Antenna dark brown. Arista dark brown, bare. Palpus dark brown, long, enlarged and flat. Oral margin only slightly projecting forwards. Thorax. Scutum dark brown. Dorsocentrals 2+3. Katepisternals 1:1. Haltere brown. Calypters white. Legs. Brown. Fore tibia with 1 long dorsal seta in apical third, its apex flat and triangular in shape. Mid tibia with 3–4 anterodorsal and posterodorsal setae on middle third and 2 submedian anteroventrals. Hind femur bowed on basal third. Hind tibia with 1 anterodorsal seta; without anteroventral and posterodorsal; middle third of ventral surface with short and fine setae. Arolium and pulvillus short. Wing. Smoky brown from base as far as cross veins r-m and m-m and at apex between costa and vein R_{4+5}. Costal spines distinct, extending as far as tip of vein R_{2+3}. Abdomen. Brown, broadly grey pollinose.

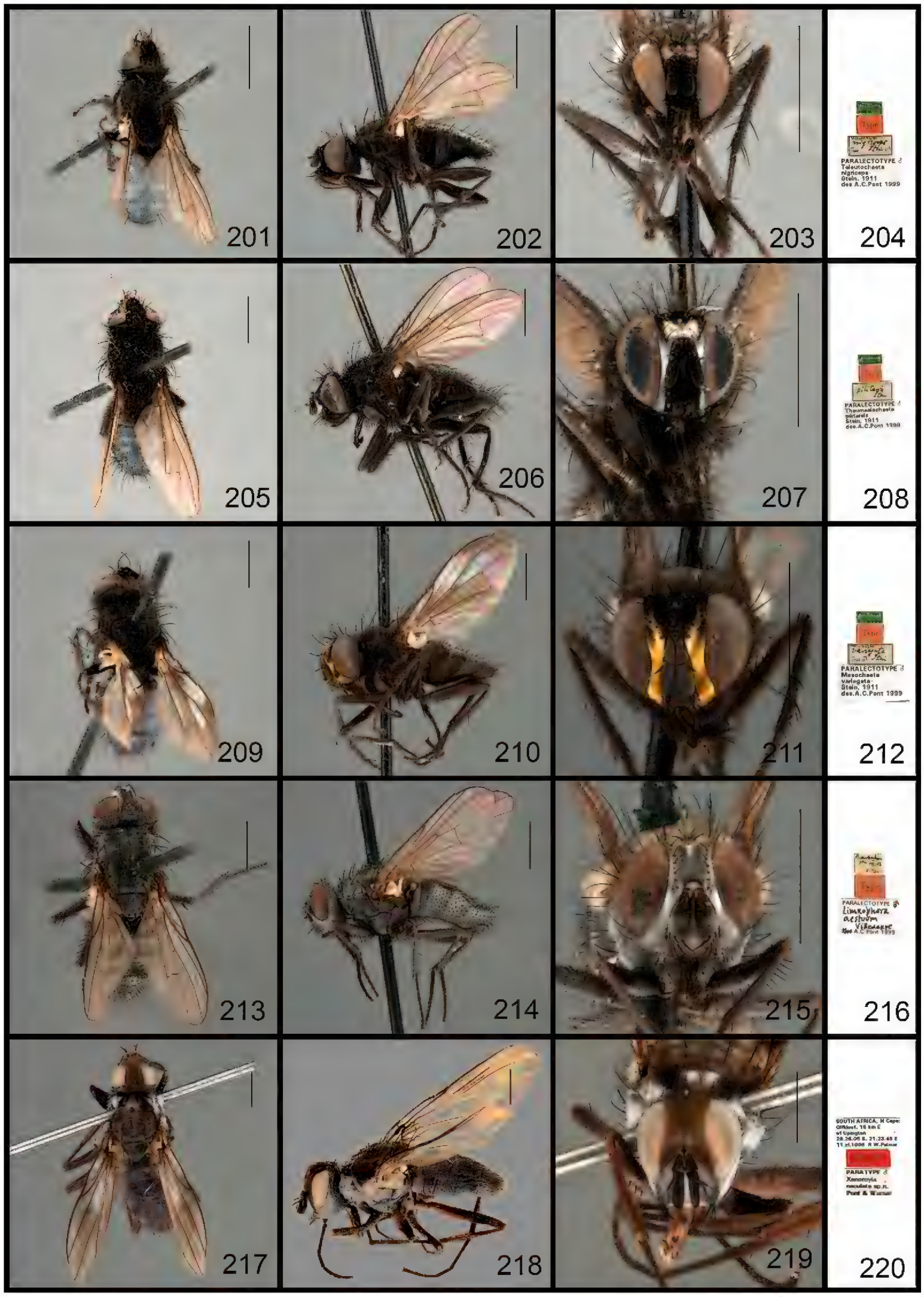
Remarks. The male can be recognized by the chaetotaxy of the legs and the markings on the wing. It was keyed by Couri (1999) and by Couri and Carvalho (2002). The morphological features and the male and female terminalia were illustrated by Couri (1999, figs 14–27).

Villeneuvia aestuum (Villeneuve, 1902)

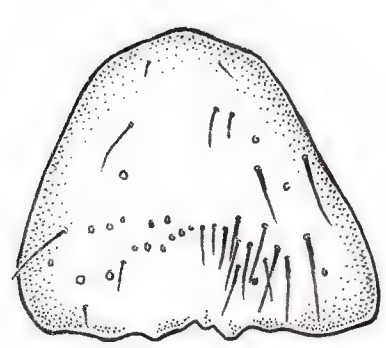
Figs 213–216

Paralectotypes. 3 males, 1 female. Lectotype in NMBA, designated by Morge (1984: 329). Belgium.

Diagnosis. Length of body. 5.5–7.0 mm (male, female). Head. Male frons broad, dark brown. Fronto-orbital plate, ocellar



Figures 201–220 *Thaumasiochaeta nigriceps*, paralectotype male: (201) dorsal habitus; (202) lateral habitus; (203) head in frontal view; (204) labels; *Thaumasiochaeta pilitarsis*, paralectotype male: (205) dorsal habitus; (206) lateral habitus; (207) head in frontal view; (208) labels; *Thaumasiochaeta variegata*, paralectotype male: (209) dorsal habitus; (210) lateral habitus; (211) head in frontal view; (212) labels; *Villeneuvia aestuum*, paralectotype male: (213) dorsal habitus; (214) lateral habitus; (215) head in frontal view; (216) labels; *Xenomyia osculata*, paratype male: (217) dorsal habitus; (218) lateral habitus; (219) head in frontal view; (220) labels. Scale bars: 1.0 mm.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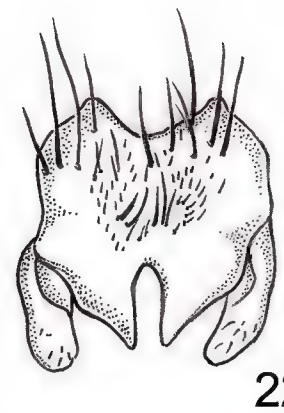
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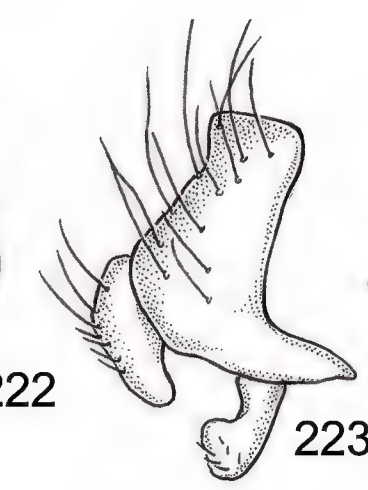
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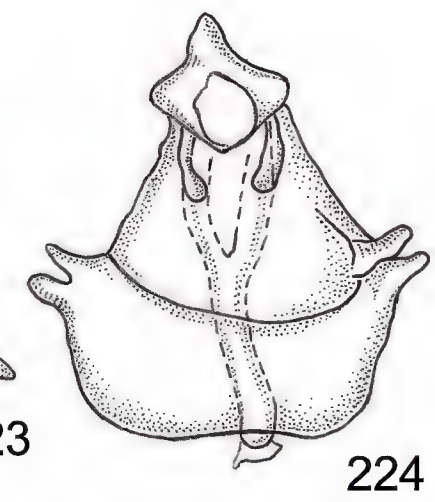
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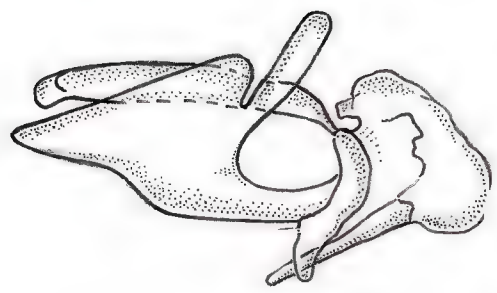
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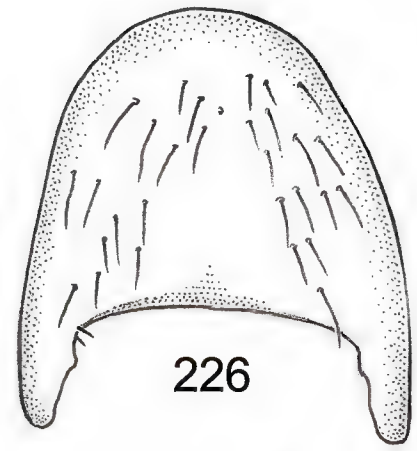
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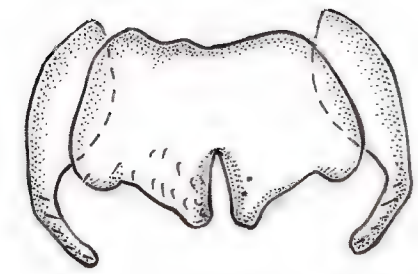
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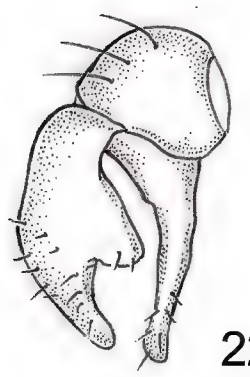
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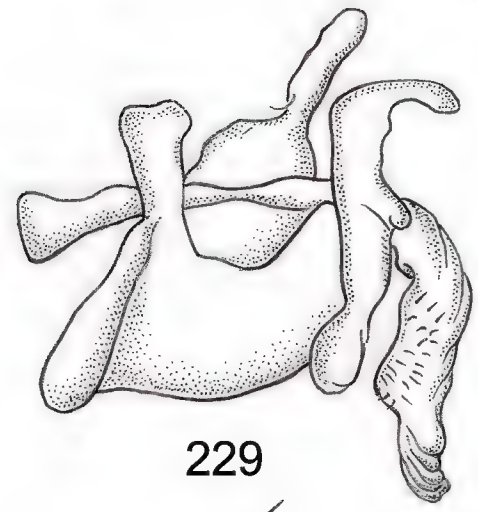
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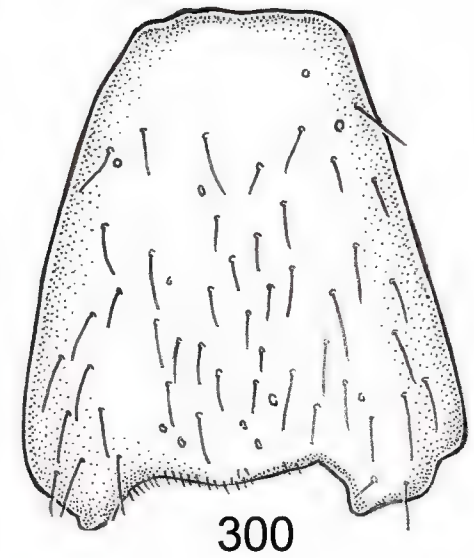
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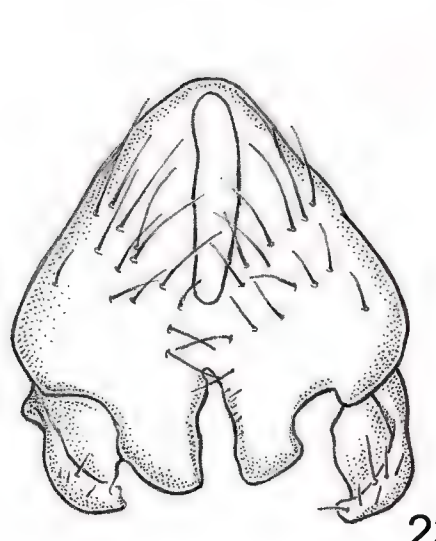
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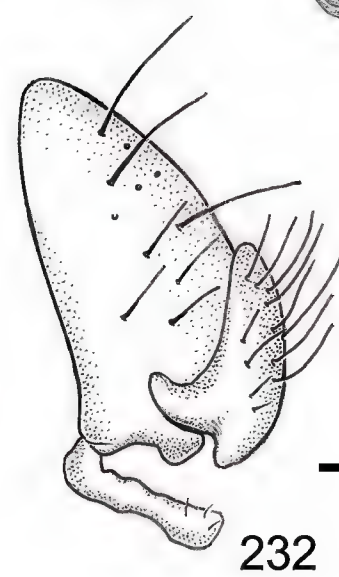
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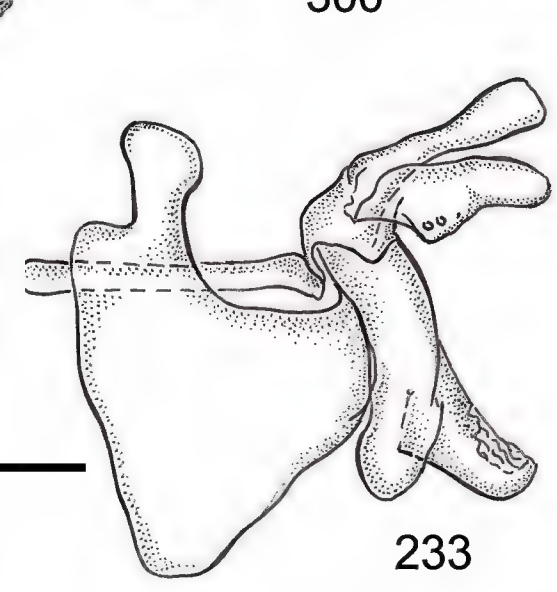
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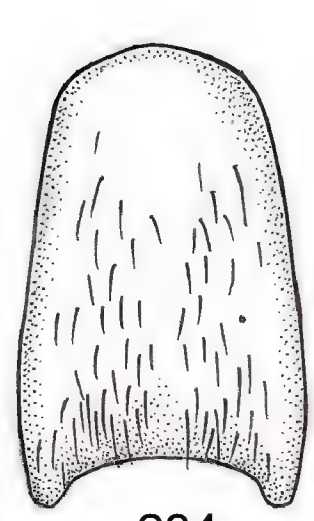
Figures 221–233. *Camptotarsopoda pallipes*, syntype male: (221) sternite 5; (222) cercal plate and surstyli, dorsal view; (223) epandrium, cercal plate and surstyli, lateral view; (224) aedeagus, dorsal view; (225) aedeagus, lateral view; *Limnophora beckeri*, syntype male: (226) sternite 5; (227) cercal plate and surstyli, dorsal view; (228) cercal plate and surstyli, lateral view; (229) aedeagus, lateral view; *Limnophora bipunctata*, syntype male: (230) sternite 5; (231) cercal plate and surstyli, dorsal view; (232) cercal plate and surstyli, lateral view; (233) aedeagus, lateral view. Scale bars: 0.1 mm.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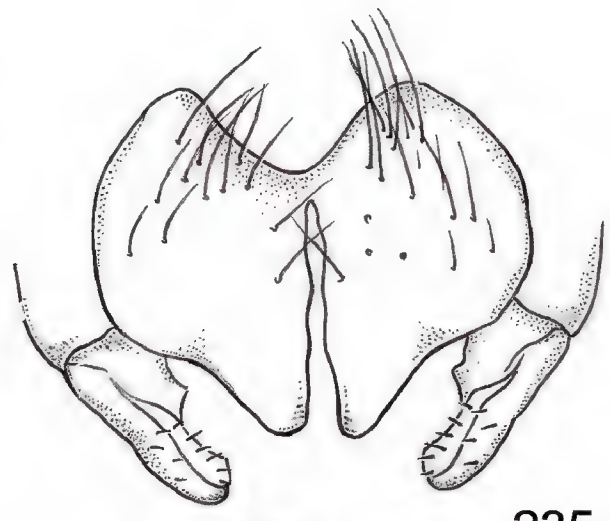
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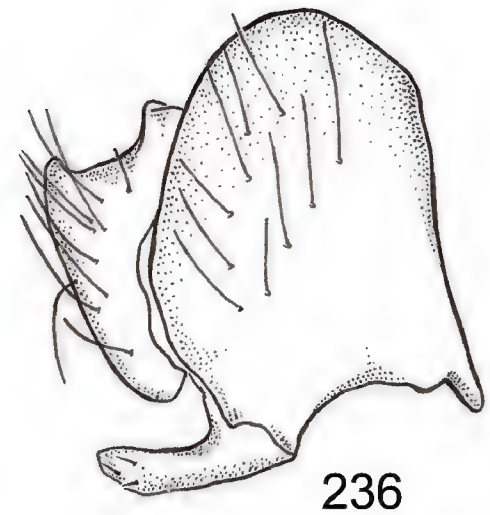
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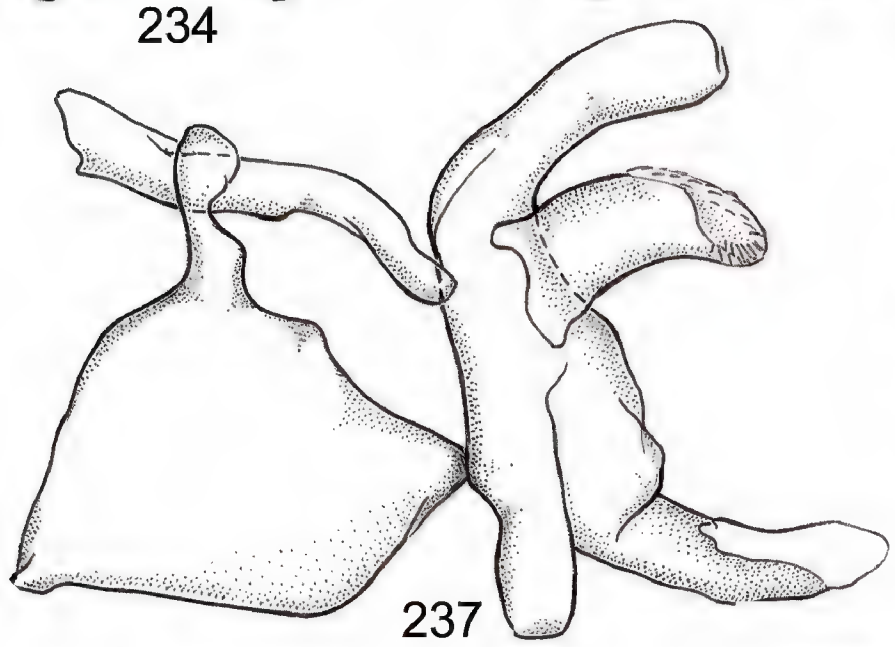
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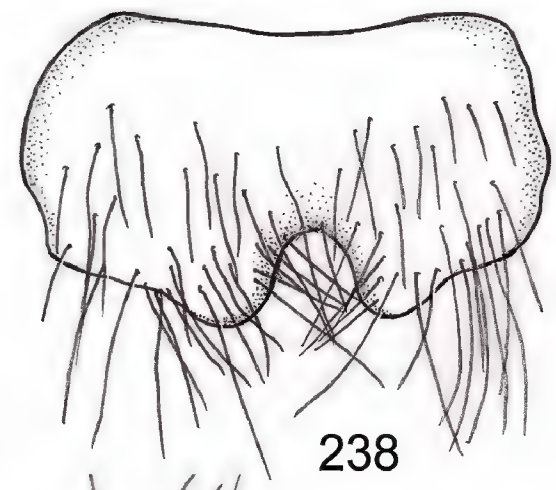
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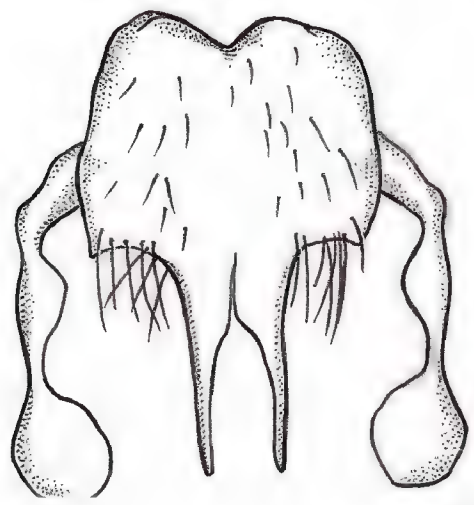
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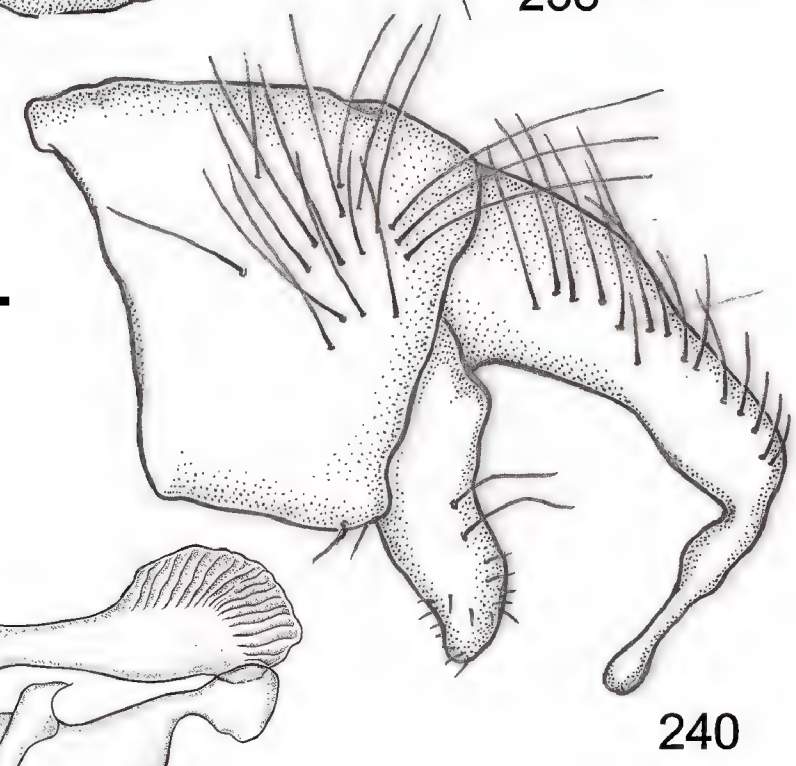
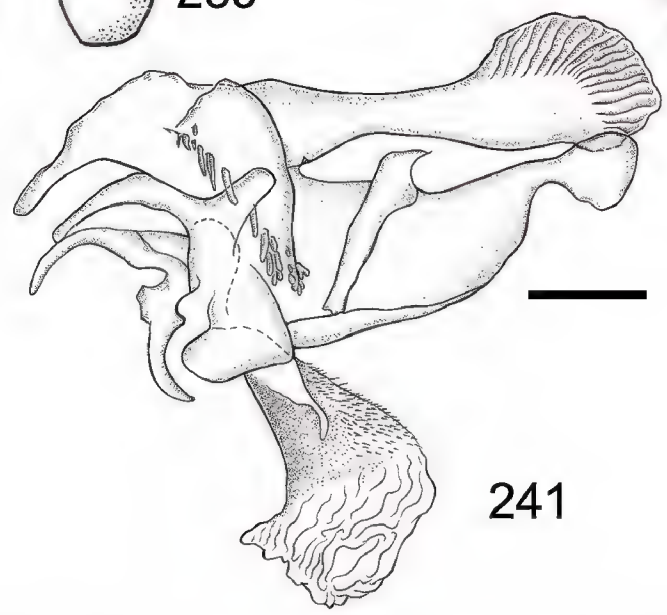
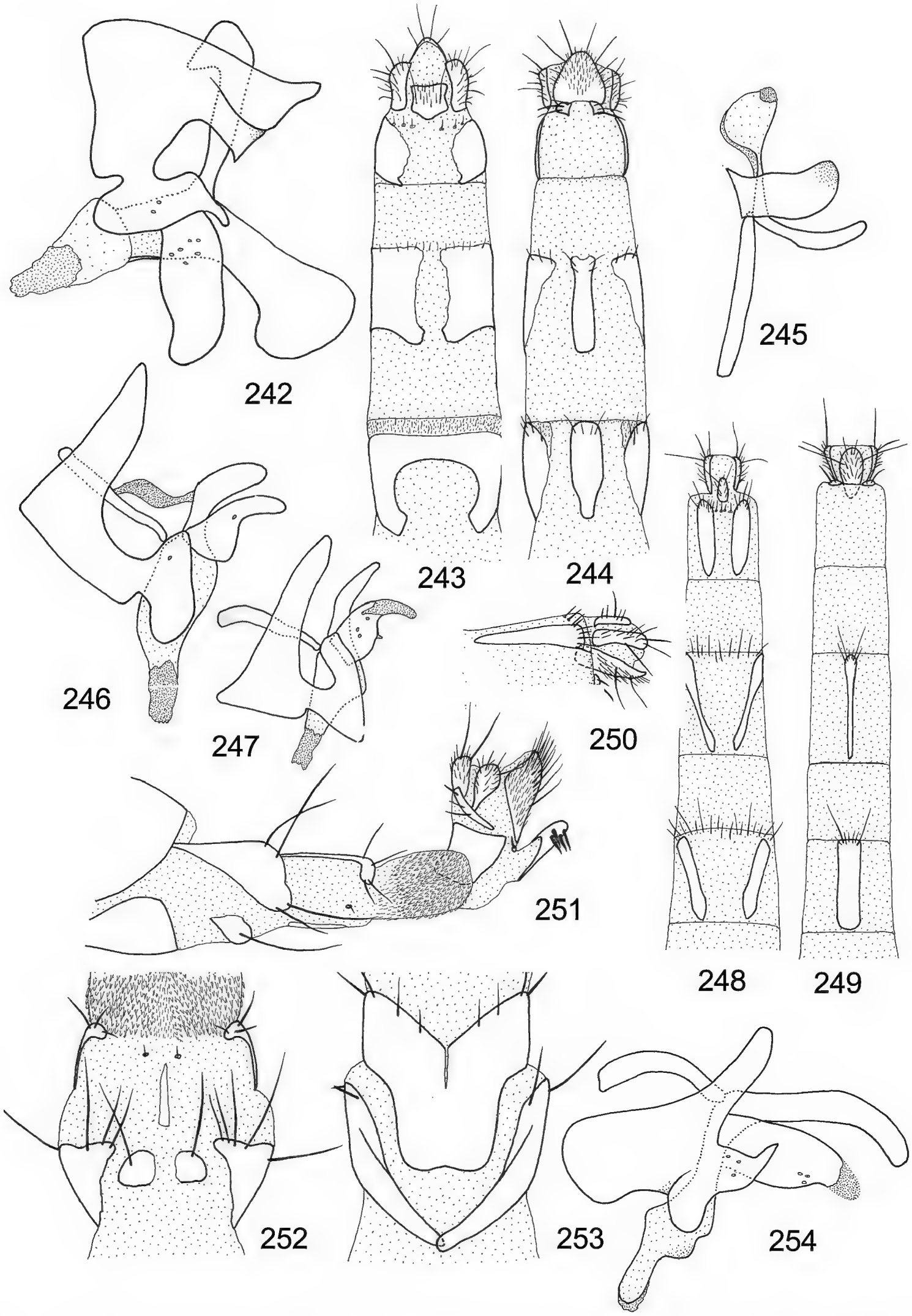

240


241

Figures 234–241. *Limnophora discreta*, male: (234) sternite 5; (235) cercal plate and surstyli, dorsal view; (236) cercal plate and surstyli, lateral view; (237) aedeagus, lateral view; *Lispe elkantarae*, male syntype: (238) sternite 5; (239) cercal plate and surstyli, dorsal view; (240) cercal plate and surstyli, lateral view; (241) aedeagus, lateral view. Scale bars: 234–240 = 0.1 mm. 241 = 0.05 mm.



Figures 242–254. *Lispoides aequifrons*: (242) male aedeagus, lateral view; (243) female ovipositor, dorsal view; (244) female ovipositor, lateral view; *Lispoides triplex*: (245) male: aedeagus, lateral view; *Spilogona hirticeps*: (246) male aedeagus, lateral view; *Spilogona semicinerea*: (247) male aedeagus, lateral view; (248) female ovipositor, dorsal view; (249) female ovipositor, lateral view; (250) apex of female ovipositor, lateral view; *Spilogona trichops*: (251) female ovipositor, lateral view; (252) female tergites 6 and 7; (253) female sternites 6 and 7; *Syllimnophora compressifrons*: (254) male aedeagus, lateral view.

triangle, face, parafacial and gena silver pruinose. Ocellar triangle grey pollinose, reaching halfway to lunule. Ocellar setae short. Antenna short, dark brown. Arista very short, enlarged on basal third, dark brown, bare. Lunule yellow. Palpus dark brown. Gena at lowest eye margin about 3 times the width of postpedicel. Oral margin very narrow and genae only narrowly separated in frontal view; vibrissae crossed (Hennig 1959, text-fig. 66a, b). Thorax. Scutum grey pollinose with 3 brown vittae, the 2 lateral ones broad. Prosternum bare. Dorsocentrals 2+4. Haltere yellow. Calypters white. Legs. Brown. Fore tibia with 1 median posterior seta. Mid tibia with 2–3 posterior setae on middle third. Hind tibia with 2 anterodorsal setae; 2–3 anteroventrals and 1 posterodorsal. Arolium and pulvillus not enlarged. Wing. Costal spine indistinct. Veins bare. Abdomen. Sternite 1 bare.

Remarks. This species can be recognized by the narrowly-separated genae and crossed vibrissae; and the short and bare arista, enlarged at base. The genus is monobasic. The male and female terminalia were illustrated by Hennig (1959, text-fig. 67, plate 10 fig. 193, plate 14 fig. 282).

Xenomyia osculata Pont and Werner, 2003

Figs 217–220

Paratypes. 1 male, 1 female. South Africa.

Diagnosis. Length of body. 4.0 mm (male), 4.5 mm (female). Head. Both male and female have a very characteristic head, with fronto-orbital plates enlarged and touching for almost their entire length and covered with small dense setulae. Frons broad, about one-third of head-width. Ocellar setae absent. Eyes small, with sparse hairs. Antenna dark brown, with postpedicel broad and long, reaching oral margin. Arista short, short pubescent. Palpus long, yellow on basal two-thirds and brown on apical third. Gena deep, about 2 times the width of the broad postpedicel. Thorax. Scutum shiny brown with two white dusted presutural lateral areas between the 2 rows of dorsocentral setae. Prosternum bare. Dorsocentrals 2+3. Haltere with knob white. Calypters white. Legs. Brown. Fore tibia without median setae. Mid tibia with 1 submedian posterior seta. Hind tibia with 1 anterodorsal and 1 posterodorsal setae. Arolium and pulvillus not enlarged. Wing. With a dark cloud formed by dense, elongated microtrichia (Pont and Werner 2003, fig. 5). Costal spine indistinct. Veins bare. Abdomen. Sternite 1 bare.

Remarks. Flies of the genus *Xenomyia* Malloch, 1921 have many characters that are abnormal for muscids and are restricted to the Afrotropical region. Of the 16 described species, 7 are from South Africa and were keyed by Pont and Werner (2003), where *X. osculata* can be identified. The male aedeagus and female ovipositor were first illustrated for *Xenomyia* by Pont and Werner (2003, figs 7–11).

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